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AMATEUR RADIO

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EDITORIAL

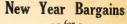
Browsing through some official correspondence the other night, I came across a term now increasingly applied wherein the Amateur Frequency Allocations are referred to as the "Amateur Services." This term came into being as the result of the Atlantic City. Convention, and signified recognition of work performed by the radio amateurs throughout the years.

Progress of the art has been shared by professional and amateur alike, and it is difficult to tell where one has started and the other finished. The fact is, that some of the world's leading radio scientists have started as humble experimenters, and, having achieved highest profesional honours, still jealously guard their amateur status in the quietness of their own homes. Yes, the amateur services do pay dividends to all who participate, be they business men or scientists, and provide a meeting ground for all such, regardless of nationality or creed.

To the young experimenter, and the old hand alike, I do sincrely suggest that all privileges in the amateur services so hardly won in the past, should be valued and guarded against indifference or carelessness.

Our ambition and creed for this New Year should give us a fixed determination to be proud of the service to which we belong, and preserve a well-balanced outbook, placing family responsibilities before all else, but determined to do all we can to uphold the traditions of our forebears in the splendid hobby of Amateur Radio.

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Series Cathode Modulation

BY PETER H. ADAMS,* VK2JX

Cathode Modulation has been widely used in Amateur phone transmitters and found to be effective, if somewhat critical of adjustment. It is surprising therefore that series, or direct coupled, cathode modulation, which is a logical development of the normal cathode modulation system has been almost en-

tirely neglected. This modulation system was used by the author—and no doubt many other than the system was "invented" by Frank Jones of the magnaine "Radio." It employs less equipment and a transmitter using it is modulation. Furthermore—and this is modulation. Furthermore—and this is very important these days—it is almost ampossible to produce splatter with its almost makes the system of t

The basic circuit is shown in Fig. 1. It will be seen that the modulated amplifier has fixed bias and grid-leak bias in addition to the bias provided by the d.c. drop across the modulator tube. Whilst these three sources of bias are not all essential, their inclusion obviates the need for critical drive adjustment which is typical of grid modulation and simple cathode modulation.

MODILATED The most suitable stage is a high-run triode which operating is a suitable with the suita

Tubes such as the 811, 812, 35T and 100TH have been found to give excellent results in practice, whilst triodes with an amplification factor as low as 10 have been quite satisfactory.

MODULATOR A triode may be used as the modula-TUBE tor and good results have been obtained with a pair of 45s in parallel. These were originally used as keyer tubes in a c.w. transmitter and, as there seemed no reason why audio (speech) voltages could not be applied to the grids instead of the d.c. for keying, the idea was tried and quite nice modulation resulted. However a beam tetrode was subsequently tried and its advantages over triodes was immediately apparent. Firstly, by supplying an adjustable voltage to the screen it is possible to vary the effective imped-ance of the modulator tube over a wide range and so arrive at an exact

match to the modulated amplifier very easily. Further, the fact that the plate current in a pentode or tetrode is substantially independent of the plate voltage allows a tube with a given plate dissipation to modulate a larger amount of r.f. power.

A singe eLEG will modulate a final taking 100 watts input to 100% quite effectively and yet the modulator requires no d.c. plate supply and no modulation transformer—surely the simplest and most economical system that could be used!

The theory of THEORETICAL. operation will CONSIDERATIONS be quite apparent from a study of Fig. 1. The modulated amplifier operates between class B and class C conditions, but may be regarded as presenting a resistive load to the modulator tube which is not strictly linear. Suppose, for example, we have a total plate supply of 1,500 volts and in the unmodulated condition the modulator resistance is adjusted by the screen voltage to a value that results in a 300 volt drop across the modulator tube. Then obviously the effective plate voltage on the modulated amplifier is 1,200 volts. Suppose now that an a.c. voltage of 10 volts peak is applied to the grid of the modulator tube. On the maximum negative swing the current through the modulator tube is

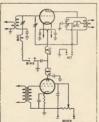


Fig. 1.

Basic circuit for series cathode modulation. By-pass capacitors for cathode and screen of modulator tube should be suitable values for speech frequencies. All others are r.f. by-passes only and should have a reasonably high reactance at audio frequencies. See text for values. reduced and as the p.a. is also in series with it, the current through this tube is reduced also and hence the voltage drop across it decreases.

Suppose this voltage drops from 1,200 to 900 volts. Then the voltage across the modulator tube must rise to 600 volts, since the total of 1,500 volts unchanged. This change of 300 volts across the modulator is added to the bias applied to the modulated amplifier and substracted from the rulat voltage.

Conversely, when the modulator grid is at the maximum positive swing of the modulating voltage, the drop across the modulating voltage, the drop across the modulating voltage, and the modulator tube. This means that the modulator and the plate voltage has been increased 200 volts. We therefore have modulation of both grid bias and plate modulation to the plate voltage has been excluded in the plate voltage and plate the contraction of the plate voltage and plate the plate voltage and plate the plate voltage and plate voltage voltage voltage and plate voltage voltage voltage.

It will be noted that, in the example, an equal change in modulator grid value and the property of the propert

Under full modulation, of course, the plate current of the modulated amplipate current of the modulated amplipate current of the modulated to the modulated amplified to the modulated to the modulated amplified to the modulated to the modulated amplified to the modulated to the

EFFICIENCY AND A class C PLATE DISSIPATION liste modulated amplifier will generally have been clearly of about 70%. As a cathode modulated stage is part grid, or efficiency, modulated and part grid, or efficiency, modulated and part grid, or efficiency, modulated and part grid, or efficiency modulated and part grid, or efficiency of the order of 50%. Then be on ally of the order of 50%. Then be on any officient part of the part of the

In a 100% plate modulated stage, the peak plate voltage and peak plate current both increase to double their value without modulation. For instance an

* "Waigani," Plateau Rd., Avalon Beach, N.S.W. Amateur Radio; January, 1949 888 drawing 100 Ma at 1,000 volts will, under plate modulation, be subjected and an advanced the subjected and the subje

Taking a practical case, the maximum plate dissipation of an 812 table under voltage for plate modulation is 1,250 volts. Therefore we can operate with a probability of the probability

For the modulator a 6L6 is quite suitable, because it will easily pass this plate current and the plate dissipation 300 x 0.05, or 15 wats, is within its ratings. Of course, if the current or dissipation were too high for a particular modulator tube, two such tubes could be used in parallel.

SPECH Using a 6.6 modulator.

AMPLIFER sufficient gain to modmodulator.

AMPLIFER sufficient gain to modmodulator.

In a crystal microphone can be obsing of a 6.7°C perhode resistance couping of a 6.7°C perhode resistance coupmanaformer coupled to the grid of the
6.6. Transformer coupling allows the
without appreciable distortion. A 2 to 1
step-up ratio is quite satisfactory and
of particularly the course meed not be
of particularly the course meed not be

The lower frequencies should be attenuated by using a small coupling condenser between the first two stages, as is normal practice in any speech amplifier.

In the VKLIX transmitter a switch on the front panel of the speech angalafour switches it into circuit as an ampilled for the receiver when the transpilled for the receiver when the transpilled for the receiver when the realpilled for the speech ampilled power
supply for the plate. In a third position on this switch the filament centretion on this switch the filament centretion on this switch the filament centrecentra and the \$1.8 tube, still connected
earth and the \$1.8 tube, still connected
earth and the \$1.8 tube, still connected
to the speaker, is arranged as an audio
seellistor and acts as a Keying monitor

are also opened up in the transmitter,

so by operating this switch it is possible to change over instantly from receiving to either phone or a w. transmission

It will be noted that cathode bits it used on the modulator tube. No doubt a wider range of operating conditions could be obtained if this resistor were made variable, but in practice it was found that a fixed resistor of the value found that a fixed resistor of the value was quite satisfactory and made initial adjustment of the modulation much simpler. For a 61.6 tube a 200 ohm resistor was used and gave good results.

The screen voltage for the modulator tube is obtained from a potentiometer connected across a 300 volt supply. This is mounted on the front panel for easy adjustment.

R.F. FILTERING Great care must sure that no r.f. curver life to the modulator tube. Filament by-pass the modulator tube. Filament by-pass condensers for the modulated amplifier should not be larger than 0.050 ur. or should not be larger than 0.050 ur. or the modulator tube. The modulation of the should be inserted in the lead from final filathese should be by-passed to earth as shown by condensers of 0.001 ur. or threatbulk.

It goes without saying that in any speech amplifier there should be no r.f. pick-up whatever in the input circuits, microphone leads, etc., and the complete amplifier should be built in a metal shield-box.

CLIPPER In a plate modulated ACTION rent insamitier the plate current of the modulated amplifier will cut off on negative modulation peaks whenever the modulation peaks whenever the modulation cuts off the effective plate voltage actually goes negative and therefore, if the modulation is considerably greater than 100%, the tube remains non-conducting the conditions of the conditions of the conditions the side of the conditions that the conditions the side of the conditions of the cond

In effect, this is the same as if the transmitter were keyed at an audio frequency by means of a key inserted directly in the plate circuit. The clicks that would be produced by a cw. transmitter keyed in this way can well be imagined and therefore it is not surprising that splatter results whenever a plate-modulated transmitter is over

In a series cathode modulated transmitter the r.f. output drops to zero before the plate current cuts off and in fact, the audio input must be increased to the equivalent of several hundred per cent modulation before the plate current cuts off completely on negative

This will be readily understood on reference to Fig. 1. Suppose, under no modulation, the drop across the modulator tube is 300 volts and the total supply voltage is 1,500. The normal drive will be covered by the hiss where

this reaches 500 or 600 voits and therefore at this point the tube receives no effective drive and therefore produce of the control of the co

Thus the positive packs can be increased up to the equivalent of at least 200% modulation before the plate current actually cuts off. There will there are actually cuts off. There will there the control of the cuts of the

The action is similar to a clipper limiting the negative peaks only and, since the positive peaks do not produce splatter, there is no necessity to limit them and they do in fact produce a louder signal at the other end if they are not limited. In the series cathode modulated stage this clipper action is, of course, entirely automatic.

It is possible to go a step further and prevent complete cut off of the r.f. out-put on negative modulation peaks. This can be done very simply by connecting an adjustable resistor from filament c.t. of the modulated r.f. amplifier to earth, or virtually across the modulator tube. If this tube is then removed from its socket the resistor can be adjusted until, with normal drive, say 2 Ma., plate current flows. Then, when the modulator tube is put back, no matter how negative the grid is driven, the final plate current cannot go below this value. Under these conditions more gain can be built into the speech amplifler and the full gain used without any fear of splatter, but, at the same time, the distortion, of course, will be greater.

FRACTICAL A series cathode and ADJUSTMENT modulated transmitter of this type in very simple to adjust. Assuming we will be a subject to with variable screen voltage supply. The first step is to adjust the modulator screen to maximum voltage (about 300 accounts) and the series of the screen of the series of the screen of the series of th

exciter may be adjusted to produce maximum drive. This makes the transmitter just as easy to tune up as a c.w. transmitter.

In the VK2JX transmitter dry batteries are used for the final bias because they are convenient and do not add much resistance to the grid circuit. There is no reason, however, why a transformer-rectifier supply should not be used, but it should be well filtered. or hum may appear on the carrier. This is because the final, during part of the cycle, is working class B.

Due to the modulator tube acting as a cathode bias resistor, the dip in plate current at resonance will not be so pronounced and, if any difficulty is exper-



Fig. 2a.

2a-Normal series cathode modula-

tion 100% 2b-Normal series cathode modulation 50%.



Fig. 2c.

Fig. 2d.

2c-With "anti-splatter" resistorabout 120% modulation on the positive peaks.

2d-With "anti-splatter" resistorabout 200% modulation on the positive peaks.

SCR522 CIRCUIT DIAGRAMS

Photostat of the complete circuit and duplicate of parts lists for the SCR522 can be obtained from the Victorian Division, 191 Queen Street, Melbourne, at net cost. Price on application. ed from the secondary of the audio transformer, i.e. the voltage at the grid of the modulator tube. The patterns that are obtained with the "anti-splatter" resistor in circuit are also shown, under various modulation conditions, in Fig 2. It will be seen that the carrier does not cut off under any conditions

ienced in determining the exact tuning

point, the modulator tube may be tem-

porarily removed from its socket and

a direct connection made between its

plate and cathode socket connections.

Alternatively, if a phone-c.w. switch is

used, the transmitter may be switched

to c.w. for tuning up. Then, on switch-

ing over, the tuning adjustment will be

Having now adjusted the transmitter

for maximum output, the screen voltage

should be reduced until the r.f. line, or

feeder, current increases when the

microphone is spoken into. As the

screen voltage is reduced, and with it

the final plate current, the carrier power

goes down, but the modulation percent-

age goes up. If a diode rectifier (or

germanium crystal) type phone monitor is used it is quite easy to determine

the screen voltage adjustment that gives

the cleanest and loudest signal and this

can subsequently be checked on the air.

Alternatively, the r.f. envelope or the

trapezoid pattern may be viewed on an oscilloscope and the modulator screen voltage adjusted until 100% modulation

is indicated. It will generally be found that at 50% modulation the sides of the

trapezoid are quite straight but become

slighly curved as the modulation percentage is further increased, until at 100% the pattern, instead of being a triangle, has the shape shown in Fig. 2a.

This indicates non-linearity but no dis-

tortion is perceptible to the ear on speech under these conditions. What

happens is that the carrier power in-

creases as the modulation percentage is

increased—the effect is similar to that

which occurs in a controlled-carrier

Of course, to obtain the trapezoid pattern, the audio voltage for the hori-

zontal-deflecting plates must be obtain-

transmitter

approximately correct for phone.

Using the series cathode modulation system on all Amateur bands, consistent reports of good quality have been re-ceived. In many cases "broadcast qual-ity" reports have been given, but is felt that these are of little value and would hardly be accepted by broadcast station engineers. No doubt a harmonic analyser would reveal more than a negligible amount of distortion at full modulation, but with speech even 10 or 15% distortion is indistinguishable to the ear, especially after passing through the average receiver.

In conclusion, it is claimed for cories cathode modulation that it is the simplest, most practical and certainly the cheapest system of modulation for Amateur use."

576 MEGACYCLES!

You think that it is too hard to get up this high? Then take a look at this simple transmitter of VK3RR's. It was on the air less than two hours after deciding to build it, which is nothing compared with the time put into building a low frequency rig

The circuit is a push pull oscillator using two RL18 tubes and linear plate and cathode circuits. The ratings of the RL18 were given in "Amateur Radio." November 1946. It is a handy little triode with full ratings up to 600 Mc. with plate and grid leads coming out the top of the envelope and an EA50 type base for cathode and heater.

Both plate and cathode circuits are plate lines are above the chassis, supported at one end by a stand-off insulator and with the plate leads of the RL18 soldered directly to the other ends. The two grids are earthed through a 1,500 ohm resistance. The cathode lines are under the chassis and the heater leads are run through them.



The shorting bars used are i" lengths of 1" diameter copper tubing squashed into a "figure of eight" shaped round a pair of &" mandrels. On tightening with a bolt through the "waist," these form very efficient shorting bars due to the large area of contact. The tuning of the cathode lines is not critical as long as it is resonant at a lower frequency than the frequency of oscillation. This is determined by the plate lines and can be measured with Lecher wires. The power is taken off by a hairpin loop near the plate lines.

No by-pass condensers were found necessary anywhere when plate modu-lated at 71 watts input.

So if you are looking for something simple, why not try 576 Mc.?

OUESTIONS AND ANSWERS

Q.10 .- From VK3KP: In his article "Series Phased Aerial Arrays" ("A.R." May 1948) the late H. K. Love suggested using twin ribbon feeder for the radiators and quarter wave phasing lines of such aerials.

How would the velocity factors for this type of feeder (e.g. 0.77 for the 300 ohm type) affect the physical length of

(a) The radiators;

(b) The Phasing Lines?

CURING THAT STUBBORN B.C.L.

BY C. GIBSON.* VK3FO

The evergreen and complexing problem of bed, reared its head at this location recently. The solution to the problem was unusual, and has not been published anywhere else as far as is known, and for those who may be in trouble perhaps the effective cure deserbed will be worth a try.

The set was a pre-war model using 6A7, 6D6, 6B7, 43, 2525, and unshielded coils, in fact everything that goes for trouble to Hams, from an interference point of view.

In this particular case the interference was that, in which, harmonics of the local oscillator beat with the transmitter signal to produce the intermediate frequency. The interference was not continuous over the whole tuning not continuous over the whole tuning about 15 points on the dial, with the transmitter on 20 metres.

All the usual methods of eliminating the signal were tried, without avail, including r.f. chokes, wave traps, grid stoppers, etc. It was therefore decided to try and improve the waveform of the local oscillator, thus eliminating the harmonics AND the interference.

The voltage was reduced on the oscil-

* 424 Centre Rd., Bentleigh, S.E.14, Vic.

lator plate to the point where oscillation almost eased—without result. Different values of grid leak, grid stoppers, and reduced coupling between grid and plate circuit also failed. Then the thought—remembering the benefits of negative feedback, in reducing audio distortion, it was decided to try this at

Since the oscillator tuned circuits have very low reactance at the harmonic



Conventional b.c. converter circuit, showing point of connection for R1, C1, and wave trap for L1-C2. R1-2,500 ohms, \(\frac{1}{2}\) watt. C1-0.5 pF.

L11 Tuned to trap interference on the

C2) band required.

frequencies concerned, a 2,500 ohm grid stopper was placed in the oscillator grid circuit, and a 05 pF. condenser connected straight from the grid to plate. A marked improvement was at once noticeable, a wave trap in the aerial lead, and a shield plate over the bottom of the chassis were fitted, resulting in complete elimination of the interference.

A larger resistance than 2,500 chms would be more effective in preventing short circuiting of the feedback voltage to earth, but a larger value than this prevented the oscillator from functioning at the high frequency end of the tuning range.

In some cases, it may be necessary to use a smaller condenser than 0.5 pF, since due to Miller effect, this has the same effect on the tuning circuit as a much larger condenser from grid to earth. This apparent value is equal to 5 pF. multiplied by the gain of the tube. Thus the trimmer condenser must be reduced in capacity to compensate for this.

These modifications are not suitable for fitting in dual wave receivers unless provision can be made for switching them out of circuit on the short wave range, as they would prevent the oscillator from functioning on short waves.

In conclusion, I hope that none of the boys have trouble of this nature, but if so, try this one—it works, and how!



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IONOSPHERIC PREDICTIONS FOR THE AMATEUR BANDS

The charts accompanying this page, prepared by the Inosopheric Prediction Service of the Commonwealth Observatory, are similar to earlier sets in the series first published in the November, 1986, issue of this magazine. Nine of the Comberna, refer to forecasts for the South-Eastern Australian States. The remainder, prefixed by the letter "Pro Pertit, are for Western Australian".

The world zones, to which these charts refer, were listed in November and December, 1948, issues.

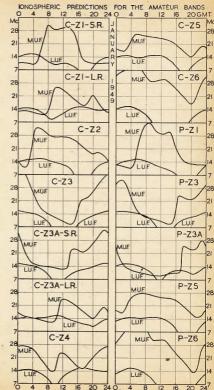
The Perth charts are similar to those based on Canberre, except that the Far East terminal is Shanghai in chart P-26. No forecasts are given from Perth to zones 22 and 24 for the current month. Chart P-22 would be essentially to the control of th

USE OF CHARTS
All that is necessary in using the
charts is to select a time (G.M.T.) during which a specified Amateur band frequency is below the maximum band frequency is below the maximum band frequency is below the free to be to

A practical example might be that of a contact desired between Sydney and Sheffield. The relevant chars are all the contact of the contact of

RELIABILITY OF FORECASTS

The prediction charts assume average donospheric conditions for the current month. Normal day-lo-day variations both above and below the mean curve. Abnormal day-lo-day variations may be due to ionospheric storms, when actual values of the m.u.f. are very much lower when the lu.f. is much higher than normal. Sporadic ionisation in the Expiton of the ionosphere, although credictions of the control of the cont



Modifying The FS6 Transceiver

BY LAWRENCE M. BILLS* heater, and was most reliable in starting

The FS6 Transceiver has been obtainable in large numbers on the Disposal market, and in its original form was not very satisfactory for Amateur

The modifications described were made for the Bush Fire Network in South Australia, and it was a unit attered to this circuit which performed so well in the disastrous bush fire in the Gawler District last February.

The alterations apply equally well for Amateur use, and the circuit would make a very nice Beginner's Transmitter for those starting out in Ham Radio.

Released in great numbers, FS6 Transceivers are well known to Am-ateurs, many of whom have put them to use as portables. The transmitters as they were, have not been popular because of their poor phone characteristics, and many varieties of re-builds have been heard. Here is described an efficient little rig incorporating most of the existing bits and pieces of the FS6 Transmitter. It embodies many of the features of higher powered rigs, and makes the utmost of the limited high tension supply available

Field tests in developing a bush fire control system showed that it was better to modulate a weak carrier well, than to modulate a strong one poorly. This prompted the testing of a variety of re-builds. including cathode, screen, plate, and Heising modulation. Of these, plate and screen modulation gave by far the best results in practice, and an experimental transmitter using a crystal controlled 6V6 driving an 807, modu-lated by a 6SN7GT driving a class B 6N7 as plate and screen modulator was very satisfactory.

The 807 gave a good carrier even at 20 mills. However, the total drain on the vibrator unit was over 80 mills, and this was far too much for the unit to stand, although experience with this vibrator at a constant load of 60 mills. over a year or so indicated that some overload could be tolerated. It was therefore decided to aim at 5 mills. no signal drain, thus allowing for the rise when the 807 was driven.

Various oscillators were tried, but none would give the necessary 2 to 3 mills grid drive without heavy plate current. The 6V6 drew about 25 mills. and was critical as to heater voltage, the drop in the leads being enough to bring the voltage down almost to the critical minimum.

An article by Don Knock suggested trying an EF50 as a pentode, and this tube certainly delivered the goods. The required grid drive was available at a plate drain of only 8 mills-the tube would oscillate with 4 volts on the

*20 Murray Street, Gawler, South Aus.

after a 25 pF. capacitor was shunted from plate to grid.

This left the 6N7 as the only tube in which the plate current could be reduced as it was difficult to expect the 6SN7 to operate at less than 10 mills with both sections in parallel. At no signal, the 6N7 took over 25 mills, using zero blas. Experiments showed however that power output was not materially reduced when the tube was biased to 6 volts or so, and accordingly the cathode was returned to the heater positive, reducing the standing current to about 6 mills. The whole rig then drew about 55 mills at no signal, rising to about 75

plug in the transceiver case when it is mounted. This particular make has convenient mounting flanges. The mike transformer is best placed in the key box, and if the key slides are loosened the transformer can be slid into the case, and locked by re-tightening the slides.

A plate current meter is essential, and the thermo couple meter can be adapted by removing the couple and installing a shunt. Existing markings on the scale can be removed with Bon Ami, or Goddard's Plate Powder and without taking off the white enamel. The shunt fed tank enables the plate current a resonance to be adjusted

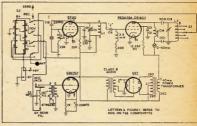


Fig. 1. Circuit diagram of modified FS6.

mills on loud speech. A little over 250 volts was available at normal levels. Fitting a 16 uF. condenser across the h.t. improved the regulation on peaks. and resulted in a perfectly clean carrier.

One or two little details are worthy of note. The r.f. chokes materially increase the drive, and the 25 uF. by-pass in the carbon microphone circuit also increases the drive to the pre-amplifier appreciably. Cascade operation of the 6SN7GT was not found necessary, and an Airzone battery-type class B transformer was quite adequate for the job. Extra drive could easily be had from the EF50 by reducing the oscillator grid leak, but there was a slight rise of plate current. At 10 mills, there was over 31 mills of grid drive to the 807. No plate or grid suppressors were found necessary at the frequency used for tests, viz. 5.62 Mc. A Denby 40 mill midget power transformer can be mounted just above the 807 tank coil if the bulkhead strut is removed, but care is necessary to get it low enough to clear the 6 volt

as desired, and the unit will then work into a rod antenna of reasonable length, or into a random length of wire. The existing coil and switch is readily modifled for this purpose A convenient mounting position for

the EF50 is horizontally behind the panel in the position normally taken by the speech-key switch, which is transferred and used as a send-receive switch in place of the existing one. The ystal is handily mounted next to the EF50, or can be made to plug in from the front. A simple switch to change from crystal to v.f.o. would also be a proposition.

As a final refinement, a PEO4/15A. which is the transmitting version of the efficient EL3, could be used. tubes are available with a normal 5 pin base, if ordered, and require rather less drive than the 807. R.F. output per milliamp, of plate current would also be a little higher, but the 807 has proved very satisfactory in field trials of this

DX Countries of the World

The list of Countries as hereunder, and as amended from time to time in the Federal Notes, is the Official List to be used in connection with the issue of the Australian DX Century Club Award, and is also the official list as used by the ARRAL for their award.

As many political and geographical boundaries are still to be finalised, it may be some time before a firm list of Countries is produced As well as applying to boundaries, these above remarks apply equally well to Amateur prefixes, which seem to vary even more than the boundaries!

The list below shows first the Country, the Zone number in parenthesis (so used for the W.A.Z. Award), and the approved Amateur prefix. Those prefixes shown in parenthesis are either provisional or temporary and may be altered as the determinations of the Atlantic City Conference become authentic

with the approval of those concern	ed.
Country	refix
Aden and Socotra Is. (21)	VS9
Adahaniatan (21)	YA
Alaska and Pribilof (1)	KL7
Albania (15)	ZA
Aldabra Islands (39)	A
Algeria (33)	FA
Andaman and Nicobars (26)	
Andorra (14)	PX
Anglo-Egy. Sudan (34)	ST
Angola (36)	CR5
Antarctica (12, 13, 29, 30, 32,	CHO
38, 39) KC4, (1	77715
38, 39) KC4, (1 Argentina (13)	LÚ
Argentine (10)	ZD8
Ascension Island (36) Australia (29, 30)	VK
Australia (20, 30)	
Austria (15) (MB9)	OE
Azores Islands (14)	CT2
Bahama Islands (8)	VP7
Bahrein Island (21)	VU7
Baker and Am. Phoenix (21)	KB6
Balearic Islands (14)	EA6
Barbados (8)	VP6
Basutoland (38)	ZS7
Bechuanaland Prot. (38)	ZS9
Belgian Congo (36)	OQ5
Belgium (14)	ON
Bermuda Islands (5)	VP9
Bhutan (22)	
Bhutan (22) Bolivia (10) Bonin and Volcano Is. (27) Borneo, Brit. Nth. (28) Borneo, Neths. (28)	CP
Bonin and Volcano Is. (27)	
Borneo, Brit. Nth. (28)	VS4
Borneo, Neths. (28)	PK5
Brazil (11)	PY
British Honduras (7)	VP1
Brunei (28)	VS5
Bulgaria (20)	T.Z.
Burma (28)	XZ
Burma (28) Cameroons, French (36)	FE
Canada (2 3 4 5)	ŶĒ
Canada (2, 3, 4, 5) Canal Zone (7)	KZ5
Canary Islands (33)	EA8
Canary Islands (33) Cape Verde Islands (35)	CR4
Caroline Islands (27)	-114
Cayman Islands (8)	VP5
Celebes and Moluccas (28)	PK6
Ceylon (22)	VS7
Chagos Islands (39)	VQ8
Channel Islands (14)	V Q0

Country Chile (12) Chile (13) Chi	Prefix
Chile (12)	CE CE
Christmas Island (29)	ZC
Clipperton Island (7)	
Cocos Island (7)	. TI
Colombia (9)	HK
Comoro Islands (39)	
Cook Islands (32)	ZKI
Costa Rica (7)	. Ti
Crete (20)	SV
Cyprus (20) (MI	7) ZC4
Czechoslovakia (15) ,	. OK
Dodecanese Is. (20)	(SV5)
Dominican Rep. (8)	HD
Ecuador (10)	HC
Egypt (and Canal Zone) (34) (M	ID5) SU
England (14)	G
Eritrea (37) (MD	3, MI3)
Paeroes. The (14)	07
Falkland Islands (13)	. VP8
Fanning Island (31)	VR
Finland (15)	OH
Formosa (Taiwan) (24)	(C3)
Pranz Josef Land (40)	
Fr. Equator Africa (36)	FG
Daster Mind (12) Cutador (16) Capri (nd Cana Zone) (34) (M Capri (nd Cana Zone) (34) (M Capri (nd Cana Zone) (34) (M Capri (nd Cana Zone) (M Capri (nd Cana Zone) (M Capri (nd Cana Zone) (M Capri (nd Capri (nd Capri C	. F
French Oceania (31, 32)	FC
Galapagos Islands (10)	&£
Gambia (35)	ZDS
Gibraltar (14)	ZB
Gilbert, Ellice and Ocean Is. (2	11) VR1
Gold Coast and Togo (85)	. ZD
Greece (20)	SV
Guadeloupe (8)	FG
Guantanamo Bay (8)	. NY
Guiana, Br. (9)	VP1
Guiana, Fr. and Inini (9)	FY
Calapsegos Islands (19) isimble (35) iermany (14, 15) iermany (15) ierman	CR
Guinea, Spanish (38) Haiti (8)	HE
	KH(
Honduras (7)	HF
Honduras (7) Hong Kong (24) Hungary (15) Iceland (40) (fai (33) Iceland (22)	VS6
Iceland (40)	T
India (22)	VI
Int (33) India (22) Iran (Persia) (21) Iran (Mesopot) (21) (b) Ireland, Northern (14) Isle of Man (14)	EP, EQ
Iraq (mesopot) (21) (N	G
isle of Man (14)	GI
Jamaica (8)	VP
Jarvis and Palmyra Js. (31)	KP
Japan (25)	PR

Country	Prefix.
Johnston Island (31)	KJ6
Kenya (37)	VQ4
Kerguelon Is. (39)	
Korea (25)	HL
Kuweit (21)	*****
Laccadive Is. (22)	VU4)
Lebanon Repub. (20) Leeward Islands (8)	AR8 VPZ
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Luxembourg (14)	LX
Macao (Port. China) (24)	CR9
Madagascar (39)	FB
Malara (28)	721 9
Muldiva Telands (22)	77.90
Malta (15)	ZBI
Manchukuo (24) (C9	MX (
Marianas Islands (27)	KG8
Marion and Prince Edward Is	(POOL)
Marshall Islands (31)	(ZS2) KX6 FM
Martinique (8)	FM
Mexico (6)	XE
Midway Island (31)	KM
Mexico (6) Midway Island (31) Miquelon and St. Pierre Is. (15)	FP
Mongolia Popula (22)	
Morocco French (23)	CN
Morocco, Spanish (33)	EAR
Mozambique (37)	CR7
Monaco (14) Monaco (14) Mongoliz, Repub. (23) Morocco, French (38) Morocco, Spanish (38) Mozambique (37) Nepal (22) Netherlands (14)	
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New Hebrides (32) F	U, YJ
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Niceragua (1)	YN
Niue (32)	ZD2 ZK2
Norway (14)	LA
Nyasaland (37)	
Oman (21)	MP4)
Pakistan (22)	AP
Oman (21) Pakistan (22) Palau (Pelew) Is. (27) Palau (Pelew) Is. (27) Palastine (20) Panama (7) Papus Territory (28) Paraguay (11) Peru (10) Philippine Is. (27) Phoenix Is., Br. (31) Pitezira Island (32) Poland (16)	200
Panama (7)	ZC6 HP
Papua Territory (28)	VKO
Paraguay (11)	ZP OA
Peru (10)	. OA
Philippine Is. (27)	KA
Pitesien Irland (22)	TTDO
Poland (15)	SP
Portugal (14)	CTI
Principe and Sao Thome Is. (36)	
Puerto Rico (8)	KP4
Phodesia Wth (28)	FR
Photosia Cth (20)	
	VQ2
Rio de Oro (33)	VQ2 ZE
Phoenix Is., Er. (31) Phicaira Island (32) Poland (15) Portugal (14) Principe and Sao Thome Is. (36) Puerto Rico (8) Puerto Rico (8) Rhodesia, Nth. (38) Rhodesia, Stb. (38) Rio de Oro (35) Roumania (20)	VQ2 ZE
Rio de Oro (33) Roumania (20) Ryukyu Islands (25) (J9)	VQ2 ZE YR KR6
Rio de Oro (33) Roumania (20) Ryukyu Islands (25) (J9) St. Helena Is. (36)	VQ2 ZE YR KR6 ZD7
Rio de Oro (33) Roumania (20) Ryukyu Islands (25) (J9) St. Helena Is. (36) Salvador (7) Samos American (32)	VQ2 ZE YR KR6 ZD7 YS
Rio de Oro (33) Roumania (20) Roumania (20) St. Helena Is. (36) Salvador (7) Samoa, American (32) Samoa, Western (32)	VQ2 ZE YR KR6 ZD7 YS KS6

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The Quad Beam

BY A. GOLDIE.* VK2TG

This beam, also known as the Cubical Quad, is a two element beam with three yeary definite advantages:—

(i) A short boom. (ii) Low angle of radiation.

(iii) Easy to feed

The boom is 0.1 to 0.15 of a wave length long and from it are suspended two squares, held with the diagonals vertucal and horizontal. These squares must be constructed the square statement of the square length for the square is a quarter wave length for the driven element and a cuarter, wave

length plus 10% for the director.

Two turns of wire are then wound round the square, the turns being spaced apart a distance depending on the gauge of the wire:

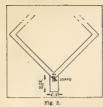
6 gauge wire—9° spacing:
10 n u —7° n 12 u ... —6° u.

6-4° ...

Fig. 1.

The two turns are connected to one another and the 300 ohm feeder as shown in Fig. 1.

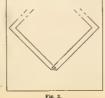
The director is similar with two turns of wire with the same spacing relation ms for the driven element. There are various methods of connecting the and 3. In each of these, the end of the first loop is connected to the beginning of the second loop (as in the driven element). In Fig. 2 across the beginning chemically the product of the driven the driven element) are connected as the driven of the driven element of the connected as the driven of the driven element) are connected as the driven element element are connected as



closed stub and a 25 pF. variable condenser. The length of the stub depends on the spacing of its wires, being 22° long for 6" spacing, and 14" long for 4" spacing. In Fig. 3 the loops are simply cross joined. The former scheme has the advantage of tuning the condenser for maximum front-to-back ratio.

The beam is essentially broad band, the loading remaining essentially constant from 27 to 50 Mc. for a beam designed for 28.5 Mc. It also will work on the second harmonic, i.e. a 14 Mc. beam would work well on 28 Mc.

NOTE.—There have recently been a number of articles on highly directional loop beams for direction finding in the 30 Mc. region. Although not the same as that described by VKZTG, they might have some interesting features for those wishing to experiment with compact beams. Four such articles are:—



rig. a.

W. Ross "The Development and Study of a Practical Spaced Loop Radio Direction Finder;" journal of the Institute of Electrical Engineers 1947, vol. 94, part III. No. 28, p.p.

F Horner "An Experimental Spaced Loop Direction Finder," J. Inst. Elec. Eng. 1947, vol. 94, part III., No. 28, p.p. 126-133. F. Horner "Properties of Loop Aer-

F. Horner "Properties of Loop Aerials," Wireless Engineer 1848, vol. 28 n 254

25, p. 254.
F. Horner "Spaced Loop Aerials,"
Wireless Engineer 1948, Vol. 25, p. 281.

-A.K,H.

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*54 Byng Street, Orange, N.S.W.

An Effective Audio Frequency Unit

BY J. N. WALKER, * G5JU

Because of the crowded state of many of the Amateur bands, methods of increasing the effective selectivity of a receiver always arouse Interest. One method which has much to recommend it is the use of an audio filter, particularly since it is easy to apply, without necessarily interfering in any way with the receiver itself.

TYPES OF Filters can be designed to produce frequency/ FILTER amplitude response curves having various characteristics. For Amateur use, two major types are of interest. One gives a very peaked response over a very narrow band of frequencies, situated in the region between 800 and 1,000 cycles. At such frequencies, the human ear develops maximum sensitivity, does not tend to become tired, and also to them many makes of the usual types of iron-diaphragm telephones show a peaked response. These factors add intelligibility to a c.w. signal, particularly if the latter is a weak one and is accompanied by interfering signals on higher or lower audio frequencies.

The second type of filter is more complicated. It is designed to pass, at a more or less uniform level, a band of frequencies between about 200 and 3,000 cycles, and to reject all frequencies above and below these figures. This pass band gives what is known as communication quality speech and results increased intelligibility under conditions where interference is likely. It elso has other applications-for instance. when included in the modulator portion of a transmitter, it ensures greater efficiency by preventing unwanted frequencles modulating the carrier.

The particular design described hereafter is of the first type but can also be applied, to some extent, to telephony reception.

BENEFITS OF An audio filter can be used with any type of receiver, superhet, or t.f. It is of perticular benefit with the t.r.f. type, since the latter is prone to suffer from lack of selectivity.

For c.w. reception, the note of the incoming signal is adjusted to correspond with the resonant frequency of the filter. Because of the special characteristics of the latter, it is then amplifted to a considerably greater degree than other frequencies, with the result that interfering signals on other adjacent frequencies and possibly of originally greater strength, become much less prominent and are more easily "forgotten" by the ear.

* Engineer, Technical Services Depart., Stratton & Co. Ltd., Birmingham, Eng., and published by special arrangement with the "Short Wave" Magazine. In the case of telephony, a very peaked response, such as is desirable for c.w., renders speech almost unreadable, as is actually the case with the present design. If however the response can be flattened out to some degree, the low and high frequencies will still be considerably attenuated and, although naturally the mid-band response will not be linear, the intelligibility can often be improved. Interfering signals, sidebands and heterodyne whistles caused by beating carriers will be much reduced in strength.

A further benefit is the reduction of background noise. It is a well-known fact that the narrower the pass-band, the less the noise, whatever its source of origin, internal or external. With high positive regeneration, the decrease in the level of background noise

is very noticeable.

The present design does three things With the positive and negative feedback controls (more of these later) suitably adjusted, the unit becomes a straightforward amplifier, but with relatively increased amplification between roughly 500 and 1,500 cycles. In this condition, it has been found excellent for telephony reception. For better linearity, the output tuned circuit may be replaced by a high inductance choke. It may also be noted that if the input and output tuned circuits are replaced by resistances, the linearity can be made extraordinarily good.

Further adjustment of the positive feedback control, almost to the point of self-oscillation results in the steep response curve illustrated in Fig. 1. It is necessary for the receiver itself to possess good frequency stability or it will be difficult to hold the signal within the narrow pass-band of the filter. The third use is an unusual one. With the positive feedback control well ad-

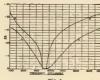


Fig. 1. Response curves of the filter unit. Curve "A" is with both R4 and R5 backed right off. (It can be flattened by advancing R5). Curve "B' is with 80,000 ohms of R5 in circuit and R4 advanced to a point a little short of self oscillation

vanced, actual oscillation occurs and the output may be employed, after further amplification, to modulate a transmitter for m.c.w. transmission. It is very likely that this form of transmission will be called for on the new v.h.f. bands being allotted to Amateurs. The note produced is entirely suitable for the purpose.

POINTS ABOUT The performance of a filter is re-THE DESIGN related to the Q Due to various of the tuned circuit. factors (thin wire, iron core, external loading, etc.), it is impossible to achieve an inherently high value of Q. The selectivity curve is not as steep as one would wish and the performance is disappointing

To attain the desired objective, it is necessary to enlist the aid of valves and introduce positive reaction to increase the apparent value of Q, at least of the input tuned circuit, to a really high value. At the same time, negative feed-back is also introduced, to stabilise the action of the circuit and minimise the effect of variations of supply voltages, loads (both input and output) and age-

ing or changing of valves.

The Circuit, shown in Fig. 2, employs two triode valves, which may be of almost any medium impedance type. For that matter, a double-triode can be used provided separate cathode connec-tions are brought out, thereby making

possible a very compact unit.

The first stage includes a tuned grid circuit, the constants of which should be such that resonance occurs between 900 and 1,000 cycles. The value of C2 (and C7) is given as 0.01 uF., but this will only be correct if the choke employed has an inductance of 3 henries at 1,000 cycles. A word of caution is necessary here. The writer initially used a choke of unknown make plainly marked "3 henries," but, in fact, a total capacity of 0.05 uF. was necessary to secure resonance at 1,000 cycles. Obviously, something was wrong somewhere and on testing the choke, it was found to have an inductance between 2.5 and 3 benries at 50 cycles but only about 0.4 henries at 1,000 cycles, due presumably to magnetic leakage. Rehable make of choke should therefore be used. One of lower inductance than 3 henries can be employed, at a pinch, but the results will not be quite so good, because of the lower dynamic resistance. Experiment will then be necessary to arrive at the proper value of C2. These remarks apply also to the anode circuit of V2

R1 is necessary to prevent a low impedance input source loading the tuned circuit to a degree which can alter the resonant frequency quite considerably. The R4/C3 combination introduces positive feedback-R4 should be wired so that clockwise rotation increases the amount of feedback. The negative feedback path is through C5 and R5 to the cathode of V1. In this case, clockwise rotation of R5 should decrease feedback (i.e. increase the resistance in circuit). No by-pass condenser must be connected across R2

A tuned circuit, having constants identical to those of the input circuit, is connected in the anode circuit of V2 and assists in sharpening the response.

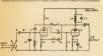


Fig. 2.-Circuit of the Filter Unit.

C1, C3, C4, C5-O,1 uF, paper.
C1, C7-O,0 uF, nica.
C8-50 uF, 12 v. electrolytic.
C8-0,0 compared uF, paper
C9-0,0 compared uF, paper
C9-

It is assumed that the gain will be controlled in the receiver itself. No gain control should be fitted in the grid circuits of VI and V2 or the operation as a whole will be upset. One can of course be fitted preceding R1 and can take the usual form of a 0.5 megohm potentiometer connected across fite input jack or terminals, with the moving arm connected to R1.

CONSTRUCTION said about the construction. The unit is purely an audio frequency device (and a stable one at that) and liberties can be taken with the lay-out, wiring, etc., to suit the constructor's convenience. Since the two valve combination gives quite as they valve combination gives quite as the purely constructor's convenience. Since the two valve combination gives quite as the valve combination gives quite as the purely construction of a receiver, in permanent forms.

As shown, the circuit is suitable for use with telephones—If lond speaker operation is desired, it will be necessary to add an output valve of the 676 type, to add on output valve of the 676 type, and output of the 676 type of type of type of the 676 type of typ

There is one point to watch—that the insulation resistance of the coupling/

S.A.R.L. DX Contest, Jan., 1949

The South African Radio League has decided to hold its first post-war DX Contest in January this year, to further and foster the underlying principles of Amateur Radio. All members throughout the world are cordially invited to participate and share in the fun.

GENERAL

 The Contest is open to licensed Amateurs throughout the world, and will be on c.w. only.

 Contacts with or reports from ships or unlicensed stations located in countries where licenses are obtainable will not count for points. The decision as to whether a station is to be classed as

unlicensed will rest with the S.A.R.L. DX Committee. 3. Only one person is allowed to operate a specific station for the duration of the Contest.

blocking condensers C1, C3, C4 and C5 in high-otherwise the value operating conditions will be altered. USING THE The input voltage will be altered. The input voltage will place the property of the place of the receiver and, in the case of commercial receivers, if should not be taken for granted that the sleeve is the "earthy" side of the telephone plug—is the reason for the inclusion of the receivers of the place that the sleeve is the reason for the inclusion of the place that th

change-over switch which precedes R1

—In many cases it may not be required.
In the first place, 84 (positive feed-back) should be backed right off. With fix (negative feedback) also backed off, the inherent gain will be evidenced off, the inherent gain will be evidenced evidenced to the property of the pro

loss of gain. On advancing R4, at the same time tuning through a heterodyne beat note. it will become more and more noticeable that the tone correspond to 950/ 1,000 cycles stands out above other frequencies. Beyond a certain point (dependent on the degree of negative feedback), self oscillation will occur. When receiving c.w., R4 should be set a little short of this point. Too close an adjustment will give rise to "singing," rendering the incoming signals difficult to copy. For telephony, R4 should be backed off to the full extent, and R5 advanced if necessary-the additional negative feedback will tend to flatten out the response, but gain will be lost. The adjustment of R5 will therefore depend on reception conditions, strength of signal and the total amplification available external to the filter unit, so that no hard and fast rules can be given.

 Certificates will be awarded to the first three DX stations, and to the first three Southern Africa stations who are members of the S.A.R.L.

members of the S.A.R.L.

Certificates also to the leading station in each Prefix Zone provided at least three entries received from that Zone.

5. All entry forms should be posted so as to reach Port Elizabeth not later than April 30, 1949, and should be addressed to S.A.R.L. DX Contest, P.O. Box 462, Port Elizabeth, South Africa. 5. The decision of the DX Contest Committee is final.

HULES

The Contest will extend from 0001
 G.M.T. Saturday, 22nd January, to 2400
 G.M.T. Sunday, 23rd January, and from 0001
 G.M.T. Saturday 29th-2400
 G.M.T. Saturday 29th-2400
 G.M.T. Sunday, 30th January, 1949.

Stations in the Southern Africa Zone must exchange six figure groups with stations in the rest of the world. The first three figures must be the signal report and the last three the self-

assigned serial, e.g., 569333, 559807, etc 3 (a). Southern Africa is divided into the following prefix zones: (1) ZS1, (2) ZS2; (3) ZS4, ZS7, ZS8; (4) ZS5; (5) ZS6, ZS9; (6) ZS3, ZE1, ZE2, VQ2, VQ3, CR7

(2) 255; (3) 254; 251; 253; (4) 253; (5) 256; 259; (6) 253; ZEI, ZE2, VQ2, VQ3, CR7 3 (b). The rest of the world will be divided into zones according to the official country prefix list except in the

official country prefix list, except in the case of: (a) U.S.A. and Canada, where zone, e.g., Wi, W2, VEI, VE2, etc.; (b) Australia, where the zones will be: (1) VK2, (2) VK3, (3) VK4 and 7, (4) VK5 and 8, (5) VK6 and 9.

4. Bands.—The 80, 40, 20, and 10

metre Amateur bands may be used.

5. Souring.—20 points for the first confact, 19 points for the second, 18 for the 3rd, and, so on down to 1 point for the 20th contact, and 1 point for each contact thereafter, in cash some. The same method applies to each band used.

6. Only one contact with a specified station may be made on each band during each week-end of the Contest; stations worked during the first weekend may be contacted again during the second week-end.

 Band monitoring stations, under the suspices of the SARLL will be active and any station reported off frequency will be disqualified.

8. Logs should show the following: (a) Date, (b) Time—G.M.T., (c) Bend, (d) Serial In, (e) Serial Out, (f) Station Worked, (g) Points Claimed. An analysis sheet for each band should accompany entries: (a) Prefix Zone, (b) Contacts—number, (c) Points.

RECEIVING SECTION

This section of the Contest is confined to non-transmitting members of the S.A.R.L. resident in Southern Africa.

Amateur Radio; January, 1949

Using the VK3WI Standard Frequency Transmissions

BY J. DUNCAN,* VK3VZ, AND R. JEPSON,† VK3JI

The Standard Frequency Transmissions broadcast over VK3WI have not been used much by Members, and it is felt by T.A.C that this is due to unawareness of the value which this ser-

vice can be to the Amsteur.

It is quite common to visit a Ham
It is quite common to visit a Ham
It is quite common to visit a Ham
stable, and with all necessary tempersstable, and with all necessary tempersture compensation and voltage regulation carried out, and which lacks one
all—an accurately calibrated disl. It
seems a pity that a v.f.o. upon which
should be left incomplete, when for the
addition of a few hours extra work, a
disl, calibrated directly in terms of
disl, calibrated directly in terms

The usual excuse when this question is asked is "How am I going to callbrate a dial, when I get it fitted?" The answer to that one is obvious, "use the Standard Frequency Transmissions provided for just such a job by the W.I.A." After the job has been completed, it is not the provided for one of the provided for one of the provided for on future Transmissions ec calibrations on future Transmissions.

There are at present, at least two commercially made dials available with dial cards left blank for calibrating purposes, and if these are not suitable, it is not difficult to make one. The main requirement is to obtain a suitable plantiarry reduction drive, which is capable of taking the calibrated dial.

CONSTRUCTION OF CALIBRATED

The dial can be constructed from white ceiluloid, cut to the correct diameter with a pair of acissors, after marking clearly with a pair of dividers. The hole in the centre should be drilled. The hole in the centre should be drilled, with a larger mores drill of the required size. If wood centre bits are on hand they can be used to make a clean hole.

they can be used to make a clean hole. The shiny surface on which the calibrations are to be drawn is removed by rubbing with fine glass paper, using a circular motion to avoid scratches. It will be found that drawing ink will "take" to this surface just as well as it would do on drawing paper.

The final job is to fit a clear celluloid

The final job is to fit a clear celluloid cursor to the front panel of the instrument on small metal pillars, the hairline on the cursor being made by scratching the surface of the celluloid with a sharp kind he had been supported by the same part of the celluloid with a sharp kind had been supported by the same part of the sam

the white celluloid into a half circle,
Technical Editor, 23 Parkside Ave.

† 12 Camden Street, St. Kilds, S.2.

fix it to the front panel with screws, and use a transparent cellulade pointer moving over the scale; in any case which-were method is adopted, the job is easily ever method is adopted, the job is easily experienced to the scale of the sca

To enable accurate calibration points to be transferred to the scale surface, a small hole should be pricked in the hairline on the centrol, large enough for the control of the control of the control of the control of the collibrated, if more than one band has to eclibrated, if more than one band has to eclibrated, as eries of holes are drilled equal to the bands required, and the spacing between the holes along the hairline should be so arranged that there beared the control of the collibration and figures.

When the calibration has been completed, we will have a series of pencil dots in concentric rings on the white calludid dals, with a few light pencil calludid dals, with a few light pencil of the v.fo. is on 7 Mc. band; if the v.fo. is on 8 Mc. band; if the v.fo. so on 8 Mc. band; if the v.fo. so permiting on a fundamental frequency of 3.5 Mc., we would also mark at the same time the S.5, 3.55, and 3.6 Mc. band; if the v.fo. is on 1 Mc. band; if the v.fo. is on 1 Mc. and 3.6 Mc. are also suggested, to save having to 60 mental arithmetic when operating on the higher bands.

Our scale would now have 5 Kc. points on 3.5 Mc., 10 Kc. points on 7 Mc., 20 Kc. points on 14 Mc., and 40 Kc. points on 28 Mc., if the calibration was made on the 7 Mc band.

DRAWING OF THE SCALES

The scale is now removed ready for inking, and it is important at this point to mark the panel or shaft in some way so that the scale can be refixed in exactly the same position.

Fix the scale to a piece of activeous with drawing piac inserted through any suitable holes in the scale, or if there will be a scale of the scale o

found the correct centre and the compass point abould be pressed into the softwood to fix it.

Draw in the circular scale with the pencil compass, and also the 10 Kc. lines by using a rule and a large pin inserted in the centre compass hole, in first. By resting one and of the rule against the pin mentioned above, all radiating lines on the scale will be even, which will give a professional looking job.

The scale is now ready for inking, and it will be necessary to obtain a drawing pen and compass, and some waterproof inkin ink; a freed can direction. To fill a pen of this type, did incident, and the pen of the pen, the like and ordinary pen in the ink and insert it between the prongs of the pen, the will run in and remain. The thickness is the pen of the pen, the will run in and remain. The thickness is piece of paper, and set by the adjusting screen.

After the scale has been inked the figures should be drawn, and it is here that the true test comes. If you are particularly good at lettering, a satisfacory job can be done with a mapping pen, but have some practice first on odd pieces of paper. If you want a perfect commercial looking job, purchase a lettering stend;

A well known type is the "UNO" lettering stendl, and is used for most of the drawings for this magazine. A typical example of the lettering done with this stendl is in the drawings of the hydraulic beam rotator. November issue. The writer has also used these stendls for marking grey crackle finish mended to those who like to make their goar look something.

The most suitable size for scales is the No. 0 pen and UC 1½ stencil for lettering, and UF 1½ for figures, the complete set costing about 18/-, complete with pen holder.

After the figures and letters have been completed the scale should be allowed to dry for a few hours, and then all pencil marks cleaned off with a very soft rubber. The completed scale can now be refixed to the v.f.o., and from then on you will be able to see where you are, without having to consult callbration graphs, which somehow never seem to be about when you

Although a v.f.o. has been mentioned in the above description, the same principles apply, obviously, to Frequency Meters and Receivers, all of which can be improved with a direct reading dial.

(Continued on Page 15)

The Super-sensitive

EDDYSTONE MODEL 504

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The 504 Receiver is a high gain super-heterodyne designed for Amateur and Professional Communication requirements. Two R.F. pre-selector stages give a first rate image suppression, excellent response to weak signals and a particularly high signal-to-noise ratio.



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Improving Stability of Type 3 Mark 11

BY H. STEVENS* VK310

Following the installation of an 807 in place of the 6L6 p.s. in accordance with directions given by 3TO in Dec. 1847 "A.R.," some difficulty was encountered in attempting to neutralise

Using conventional neutralising methods, it was not possible to achieve complete stability. Although without plate and screen voltage on the tube the grid current did not vary when the p.a. tank was tuned through resonance, but when plate and screen voltages were applied and the rig tuned up, the r.f. output appeared undiminished when the crystal was removed from its socket. Removing the EL32 from its socket, the following

effects were noted When neutralised (by means of the conventional grid current method) the oscillation, whereas without the neutralising condenser or incorrect adjustment of it caused self oscillation. These same effects occurred when the EL32 was plugged in but with its plate and screen supply disconnected

Tuning the rig up again and removing the crystal produced the same result as already mentioned, but shorting the

* 33 Auburn Grove, Hawthorn, E.3.

grid of the EL32 to earth stopped it Realisation at last dawned! The EL32 not the 807, was the culprit, feed back being introduced by stray coupling between the plate of the 807 and the grid of the EL32. A shield between these two tubes confirmed this and on removing the crystal from its socket, the set is completely dead. These effects were noted on 3.5, 7, and 14 Mc. using 3.5 and 7 Mc. crystals, and this, together with the fact that a shield between the two tupes cured the trouble, proves that the own accord when the crystal was removed.

For those riot familiar with the Tyne 3 Mark II., it is pointed out that these two tubes are mounted very close together-right alongside each other in fact. With the original p.a. tube this trouble should not occur and for the home constructor the foregoing presents a useful design hint-don't overcrowd your stages. The all important shield can be readily mounted on the transmitter case, care being taken to see that when in its normal position the shield does not make contact with the terminal strips mounted near the front

ure is repeated until 7,200 Kc. is

If the hour is not too late frequency checks will then be made for any Member contacting VK3WI.

In obtaining an exact zero beat against the Standard Transmission, an "R" meter is very useful, as the needle will show a slow pulse when the v.f.o. and Standard Frequency are almost zero beat. If there is any likelihood of interference blanketing out a check point, a graph can be drawn and the missing point obtained with quite good

A.O.C.P. CLASS

The Victorian Division A.O.C.P. Class will commence on Thursday, 20th January, 1949. Lectures are held on Monday and Thursday evenings from 8 to 10 p.m. Persons desirous of being enrolled should communicate with the Secretary W.I.A. Victorian Division, 191 Queen Street, Melbourne (Phone FJ 6997 from 9 a.m. to 5 p.m.), or the Class Manager on either of the above evenings.

DX COUNTRIES OF WORLD (Continued from Page 9)

San Marino (15) Sarawak (28) IS Sardinia (15) Saudi Arabia (21) HZ Scotland (14) GM Seychelles Is. (39) 37/00 Siam (26) Sierre Leone (35) ZDI Sikkim (22) (AC3) Solomon Islands (28) Somaliland, Br. (37) Somaliland, Fr. (37) Somaliland, Ital. (37) (MD4) VO6 FL (MD4) South Georgia (13) South Orkney Is. (13) VPS South Sandwich Is. (13) South Shetland Is. (13) ZS3 Southwest Africa (38)

Soviet Union:-

Spain (14)

Sumatra (28)

Yemen (21)

Yugoslavia (15) Zanzibar (37)

Svalbard (40)

European S.S.R. (16)
Asiatic S.S.R. (17, 18, 19)
Ukraine S.S.R. (16) ÜA9, 0 UB5 White Russia (16) Azerbaijan (21) TIDE Georgia (21) Armenia (21) Turkoman (17) Uzbek (17) TITE Tadzhik (17) Kazah (17) UMB Kirghiz (17) Karelo-Finnish (16) Moldavia (16) Lithuania (15) Latvia (15) Estonia (15)

TTA

PK4

KS

SM

ARI VQ3

EK

AC4

MF2

ZD9

K, W

KV4

KW6

GW

CR10

Swan Island (8) Swaziland (38) Sweden (14) Switzerland (14) Syria (20) Tanganyika Territory (37) . . Tanger Zone (33) Tannu Tuva (23) Tibet (23) Tibet (28) Timor, Port. (28) Togoland, Fr. (35) Tokelau (Union) Is. (31) Tonga (Friendly) Is. (32) Transjordania (20) Trieste Free Terr. (18) . Trinidad and Tobago (9) Tristan de Cunha and Gough Is. (38)Tunisia (33) Turkey (20) Turks and Caicos Is. (8) Uganda (37) Union of South Africa (38) United States (3, 4, 5) . Uruguay (13) Venezuela (9) Virgin Islands (8) Wake Island (31) Wales (14) Windward Islands (8, 9) Wrangel Island (19)

USING VK3WI TRANSMISSIONS (Continued from Page 14)

TIMES AND METHOD OF THE TRANSMISSION The times and method of transmitting the Standard Frequency Trans-

missions are as follows:-Times.—The transmissions will take place at three monthly intervals,

and are listed in "Amateur Radio"

Dates for the next 12 months are: 26th January,

28th April, 22nd July, 22nd October.

Transmissions take place on the 7 Mc.

band at intervals of 10 Kc., the frequency of the transmissions being accurate to better than 0.01% or 500

The operating procedure and times of transmission being as follows:-7.50 p.m .- Phone transmission on 7196 Kc. with a general call and infor-

mation on what is about to take 7.55 p.m .- VK3WI shifts frequency to

7,000 Kc, and calls as follows on c.w. at 12 w.p.m.:—S.F.T. (Stand-ard Frequency Transmissions) 3 times de VK3WI (3 times), then .- QRG -... 7,000 Kc. (twice). The key is then held down for one minute; then QSY 7616 Kc. (twice) de VK3WI (once) AR. The transmitter then commences operation on 7,010 Kc., and the proced-

Oh Lord, Our Help in Ages Past!

BY "OLD HOMBRE"

Freedom of speech is one of the tenets of Democracy—most of us fought to preserve it along with other privileges a little while ago. But freedom of speech eas be a bit overdone, an unpleasant fact that is obvious in the world of Amateur Radio, especially after listening to some of the 7 Me. "gang." The other bands are not

The present-day urge seems to be toward speech in quantity rather than in quality—not so much a technical consideration, but one involving what we, of British stock, like to style as "The King's English."

One wonders if many of those who consistently and persistently mutile grammer over Amateur radiophone channels do realise that theirs is no session "in camera," and that anybody can listen; that broadcass listeners with short-wave bands on their receivers can and do sit back in virtual judgment?

Much of the jurning drivel that thus becomes public property via Amateur microphones is doing extensive damage to the status of the Radio Amateur; his stocks are by no means rating, and it is stocks are by no means rating, and the stocks are by no means rating, and the stocks are by no means rating, and the stocks are by no means rating, and it is stocked in the sand about it. Many of the undesirable features were with us in pre-war dawn, but now they are with us in pre-war dawn, but now the will be supported that the property of the stocked and "mouthail the support of the stocked and the support of the support o

Prequest interpolations of the mores abbreviation denoting mirth are such as to accuse a feeling of distasts, to say nothing of moronic requests for a symmothing of moronic requests for a symmothing of moronic requests an amount of the second of the seco

Many years ago Amateur Radio be-

came characterised by telegraphic abbreviations, adopted from commercial operating practice as a convenience, not a necessity. For the purpose intended. O calls and other abbreviations serve good purpose; but when injected into speech in overdoses they strike a discordant note. They are just as much off-tune as the lad who smothers a verification card with a mass of "radioese" Letters and cards written in the "Mni tnx fer QSO OM es cu agn-hi" style are not pretty; nor is such microphone jargon as "OK old man about my sigs being OK over there, what's your handle?; the handle here is Alec-A for America, L for Louisiana, E for England" (etc.) and the "kewteehaitch" here is the little one mule town of Wasnville" Ad lib.

The alternatives to these practices? Simple in the satreme—to write fully without resorting to a reading telegraphic condensations, exceeding telegraphic condensations, exceeding sensibly. For both facilities, exceeding should have been responsible, but of course there are always the "no-hopers" in any place of learning. Unfortunately Amateur Radio appears to have attracted more than a surfeit.

A continued at the would cross he can be the continued at the continued at

This kind of outrage persists oft-times on a would-be DX band, and with all of 100 watts to convey it to another less than a mile distant. That recipient invariably comes back with "Roger, Roger Dodger, all one hundred per cent.

STATION DESCRIPTION

VK2VW KINGSFORD

Like most other Ham stations the equipment has undergone many stages of rebuilding, but is now operating fairly the state of rebuilding but is now operating fairly terra are used, one covering 60, 20 and 10 metres; one for 6 metres, and a constant of the control of the contro

Power supplies and modulator are common to both these transmitters and can be switched to either as required. All transmitters, power supplies, etc., are housed in two six foot standard racks and full push button remote control is provided by means of interlocking relays.

Besides the usual mess of papers and cigarette sub, the operating table carries three receivers, a twelve tube all-band superhet with crystal filter, a sub-band superhet with crystal filter, a ser mounted in a small rack and beside them is a unit containing sub-modulator, with AMC, tone cacillator and modulations with AMC, then cacillator and contains remote content and cabract contains remote content relays.

Separate aerials are used for each band. The 20 and 40 metre radiator is a 36 foot dural mast which gives excellent results on DX. A half wave doublet operates on 10 metres and two four element beams operate on 50 and 144 Mc.

Sadie came over good-oh but there was er bitter feedback when youse was on, yer 'mojerlasheeun's down a bit'."

Amating does it seem to many that the PMG, settually licenses people to do this kind of thing, for, the Lord knows, it is shout all some of them aphenous, it is shout all some of them aphenous that the state of the state and to some spring-the state of the state of

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Secretary -- Dick Dowe (VK2RP), Box 1734, G.P.O.

Meeting Night.—Fourth Friday of each month at Science House Corner Gloucester and Flame Ste. Divitional Sub-Editor H F. Trohame, VK2BM, S.

Divisional Sub-Edrier H. F. Trehame, VICZBM, 5 Weimas St. Burwood. Zone Correspondents. North Coart and Tablelands: P.A. H. Alexander VKZPA, Hill St., Port Mac-cuse's, Newcartle: E. J. Baker VICZPP, 13 Skelton St. Herr Iron. Newcartle: Coaffeids and Earth St. Herr Iron. Newcartle: Coaffeids and Earth

VICTORIA

Secretary.—C C Ouln, WSJWO.

Administrative Secretary.—Mrs. O Cross, Law Court
Chambers 191 Queen St., Melbourne, CT
Meeting Might.—Frst Wednesday of each month at
the Radio School Melbourne Technical Cellispe

the Redio School Melbourne Technical College Cene Carespoelers—North Western S. R. Mann, VSIBM Duarbahook, Western C. C. Warnig N. March C. Warnig C. Warnig Ballata, North Eastern: J. A. Miller, VISABG, "Ferwake" "Awere, E. R. North-Wartern Zose Herry Dobbyn, VISAM, 42 Walnut Ave., Mildur, Eastern Zose: J. D. Chilbery, VISAD, 20 Smith St, Eastern Zose: J. D. Chilbery, VISAD, 20 Smith St,

WI BROADCASTS

All Amateurs are urged to keep these All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official Broadcasts.

VK2WI,—Sundays, 1100 hours EST, 7196 Kc and 2000 hours EST, 50.4 Mc. No fre-quency checks available from VK2WI Intra-State working frequency, 7175 Ko

VVIVI -- Sunday 1130 hours FST 7196 Kr Individual frequency checks of Amateur Stations given when VKRWI is on the air

VK4W1 -- Sundays (930 hours EST simultane-ously on 3750 Ke., 7190 Ke., 14 342 Ke., 52 4 Mic. and 144 138 Mic. Frequency

thecks are given two nightly weekly and the times are announced during sunday broadcasts 7010 Kc. channel is used from 1000 to 1030 focus each Sunday as VK4 curry storics to 4WI

VKSWI.-Sundays, 1000 hours SAST on 7196 Kc Frequency checks are given by VKSDW on Friday evenings on the 7 and

VK6WL—5+c 2 p.m. Sun 9:30 a.m. W,A S.T. between 7000 kg, and 7200 kc. No frequency

checks available VICTWIL—Second and Fourth Sundays at 1030 hours EST on 7174 Kc. No frequency checks are available

OURSELS AND

Secretary.- G. G. Augustesen, Box 6387, G.P.O.

Meeting wight.—Last Friday in each month at the State Service Building, Elizabeth St., City. Divisional Sub-Editor: F. H. Shannon, VK4SN, Minden via Rosemod

SOUTH AUSTRALIA Secretary.-E. A. Barbler, VKSMD, Box 1234K, G.P.O.,

Meeting Night.—Second Yuelday of each month at 17 Waymouth St., Adelarde Divisional Sub-Editor.—W W. Parsons, VKSPS, 483 Esplanade Reniev Beach

WESTERN AUSTRALIA

Secretary.-W E. Coxon, VK6AG, 7 Howard St , Perth. Meeting Place.—Padbury House, Cnr St George's Ter and King St., Perth. Meeting Night.—Watch the Monthly Bulletin.

Divisional Sub-Editor.—VK6WT Mr D Couch, Mary Street, Watermans Bay, W Australia

TASMANIA Secretary.—J Brown, VK78J, 12 Thirze St., New-town, Telephone: W 1328. Meeting Night,—First Wednesday of each month at the Photographic Society's Rooms, 163 Liverocol

Divisional Sub-Editor.---T. Connor. VK7CT, 385 Eltrabath Sc., Hobert

Morthers Correspondent.-C. P. Wright, VK7LZ, 3 Knight St., Launceston

FEDERAL DX C.C. LISTING

Zones Countries

CW

VK3CN (2) VK3PZ (24) VK3EK (2) VK3VW (12) VKSVW (12) VK2RO (T) VK4DA (20) VK2QT, (18) VK4HR (20) OPPN ountries VK8RZ (5) VE2DI (2) VK8KZ (1) VK3KG (4) VK3HG (15) VK3HG (15) VK4HR (9) VK4MR (9)

VK24CX (8) ... 60 VK24CA (16) ... 40 VK34DT (21) ... 40 Figures in parenthesis indicate membership at mber to the DX C C. ANNUAL FEDERAL CONVENTION

The Annual Federal Convention will be held of the properties of the held of the properties of the held of the properties of tome for the Agreda may be put it had early so that all Derinions will have an opportunity to discuss tham, now for the first properties of the properties of if for lockudon in the Agenda We are hopeograthat year to have a really original Agenda without those "bardy annuals" that always seem to readpear from year to rear

LIST OF DX COUNTRIES OF THE WORLD As a result of many requests, we are including elegaters in this issue the up-to-date List of DX Countries of the World, including Zance and Progress, We treat this will satisf the DX game, and

free. We trust this will assist the DA game, any hope in future to re-publish this List every January Amendments will be included in these Notes from time to time as the occur WAS ON SO ME BUILES As it is understood that Federal Executive will be making their first issue of a W.A.S. (Australia) Certificate in the mear future for 50 Mc., it is hoped to publish the necessary details in the

WAR AWARD

Details of a new award, the Worked All Pacific (WAP.) have been announced and will be pub-lished in the next laune. Watch for the details of this difficult to-conscion Award SUB-DIVISION OF AMATEUR BANDS

From the Radin Clob of Amazieum Sants
From the Radin Clob of Amendian comes news
that it has been agreed by that Society to subdivide their 7, 14, and 28 Mc. bands between
phone and c.w. as follows... 7050-7075 Kc phone and c.w. 7075-7300 Kc phone

7075—7200 Kr. phone 1400—14100 Kr. c.w 1410~-14150 Kr. c.w and phone 14150—14160 Kr. phone 2800—28100 Kr. c.w. 28100—28100 Kr. c.w. snd phone 18150—50000 Kr. phone R is becoming increasingly apparent throughou

R is becoming increasingly apparent throughout the various constrain of the world that constituing most be done repecting our DX hands. While some countries are making these divisions computers the W.LA. feels that a "gentleman" agreement, must be given a fair trial. To this end, the lest Convention agreed to a plan on this basis. The following frequencies were bone decided on—

3500—3550 Me. c.w. only 7600—7630 Me. " 14000—14100 Me. " 21000—21100 Me. " 28000—28100 Me. "

It behaves every Amateur to remember the off It beloves every Amateur to remember the other fellow when opersting, especially on the main DX bands, and if this agreement is velonizarily success-ful, there will be no necessity for the Wil.h to be as dreatic as some of our fellow Societies have been. It is up to the individual to do his part, so give it a try and see how much move pleasant our operating can be without restriction. COMMERCIAL INTERFERENCE

The first list of off-frequency commercial stations

logged in our bands has been sent to the appro-priate authorities. In order that this may be a continuing function of FE, to supply these details, please make a note of that commercial you have been hearing and send the relevant details (as full as possible) to the Federal Secretary without delay

AUSTRALIAN AMATEUR CALL SIGNS New Jesusature

VK2ADO-D, Batley, 2 Myra Ave., Ryde, NS-W 2AGO-H Jones, 16 Council St., Sprers Point 2AGN-G. E. Nixon-Smith, 16 Badham Ave., Hosman,
ZAKC--Kingsford & District Amateur Radio
Club, 48 Esiabow St., Kingsford, N.S.W.,
ZAOX-H. Coxt, 41 Rixon's Pass, Woomeas,
ZARU--F N. Sizemore, 22 Tweedmouth Ave.,

Bosebury 24RY-H C. Bine, Hyde St., Bellingen 24RY-T L. Somers, 2 Ingham Ave., Five Docks 24SP-S. J Parr, Plat 4, 23 The Crescent,

Manly 2.4WP. W. G. Coward, Cossilarcy Station, via

Monginel.

2HS—R. W. Raifs, 19 Dodley St., Coogee.

2EC—R. A. Catmur, 2 de Quincey Bd., Balla

2KC-R. A. Catmer, 2 de Quincey Rd., Balla 198-M. T. Smith, 11 Bridge St., Lane Cove. 2XT-M B. Harsee, 17 Fifth St., Lambton. VESARK-R. J. Holghway, 57 High St., Geology West VG. 2ACL-E. J. B. Andrew, "Riccida Orchard," Red Hill

SADC-D. Charlton, 12 Stevedore St., Williams-

SAEM-A. E. Moralce, 84 Reynolds Pde., Pascoc SAGM-G. M. Carmell, 37 Faces Rd., Surries Helia. J. Zarth. 443 Waverley Bd., North. BAID—A. J. Earth, 463 Wavestey me., norm. Carnings, Beanite, 36 Bossen St. Onthicips BAIC—D. J. Breman, "Edebvetes," Buogger SAIG—D. McGenzi, 10 Chambers St., Pootserer SAIG—A. M. Smallwood. 72 Merton St., All Manual Carlo St., Prescham, BAID—B. C. Stephene, Albert St., Twesham, BAID—B. C. Yeates, 4 Cennings St., Monner Carlo St.

Fines. 9 Sweeter St., Ballarat East. #ZO-N. L. Storok 4 Parliament Place. East. S. A. McMurtie, Maryberough Bd., Gymnie, Queensland

Assacration of the Control of the Co D. Waltinson, 447 Esplanade, Henley

320—P. D. Whitmon, eer sepatases, Webb.—W. A. J. Du Feu, 20 Walker Ave., West Perti, N. A. J. Du Feu, 20 Walker Ave., West Col.—26 Col.—18 G. Thompson, X-Ray Dept.—6 Cl.—26 Col. B. G. Thompson, X-Ray Dept.—8 RO.—R. G. A. Cophin, S. S. Hockey Rd., Sublace 6WX.—M. G. Haynen, 4 Leonard St., Victoria

Park.
VK7HY-H. M. Yeates, 47 George St., Launceston. VNTHY-H. M. Yestes, 47 George St., Launceston.
VKOFD-mino, c/o, D.C.A., Noriolk Island.
BY3-H. G. Jimes, O'T C. Radio Station, Macding, New Gotnes, T.F.S.G.,
00M-G. K. Moston, Noriolk Island.
00M-S. J. Pascos, S.D.A. Masion Headquarters,
Inou, Bouga nville. T.P.N G.

Cancelled:-VKSHE 2KC, SNE, 2PB, SXY VKSAH, SAJY, SAPD, SKY VKSAH, SHO, SKU VKSAF, SGP, 5KN, 5ZN VKSPK, 6GW SQF, VKPK, FR

Alterations;---

VKSACR-W. J. Hart, 42 Botanic Rd., Morman, EAOT-J. R. Langley, 29 Fourth St., Ashbury SARY-H E. Quilty, 180 Hastings Pdc., North

BARY-S. J. K. Adshead, Byng St., Holbrook 2BJ-W. A. Pasterling, 16 St. Peters St. St. 2QO-J. L. Carter, 132 Mudeline St., Builleld

2XB-F. G. Melvax, Delgarno St., Cossabora-2XW-A. J. Voysey, 342 Stoney Creek Rd.,

Kingsgrove VKSADA-J. B. Jarmen, 192 Buckley St., Essen-don, Vic.

SADL-B E. Matheson, O.T.C. Radio Station. Fiskville, via Ba lan 3AZO-J. A. Cunliffe, 21 High View Rd . East BHZ-E M. Clyne, 99 Coris St., Shepparter 31U-T. J. Coakley, 5 Lincoln Rd. Executors 30K-J. P Perse, 47 Station St. Camberwell

3UQ-N. G. R. Foxeroft, 181 Victorian Rd. Wetherse P. Black, c o. Radio Station 4RO
Rockhampton, Qid
4CI-A. J. Forbes, 144 Boveen Tre., New Farm
4RP-N, J. Mitchell, Octantia St. Coorparon.
VK0Q--P. R. Trickney, 3 Endwood Close, Pjung.

ton, Scuth Ausralla

\$LL-G H Lines, 15 Augusta St., Maylands

\$EZ-A L. Nestrom, 48a The Broadway, Glinely
VK:BJ-K M Bunn, D C A Aevodrome, Geraldton,

65R-Badio Society of W.A. Inc., 49 William St. Perth VK7GC-G. P D. Clarke, 24 Newlands Ave. Newtown, Tasmania.

TLL—Dr. K. M. Kelly, 451 Sandy Bay Rd.,
Hobart

FEDERAL OSL BUREAU RAY JONES VICIRJ. MANAGER

According to JIAAL, through VESPE, prefixes for Jupan are to be changed as from 1st January, 1949. The new prefixes are:—

J 52 Tokyo area. JAS Nagoya area

JAG Not issued. JA7 Kyushu sves. JAS Northern Honshu area.

What is now JT will be Jap.

VIIEF, R. B. Pagan, Kewalt OH Co Ltd.,
Kowan, Persian Gull, advises "that he is question
this transmitter by permission of His Highnois Sir
Neakh Ahand Jabir Ahando and our politics." AUTINX, Oton S. Bernard, Bex 137, P.C. Trieste advises that as at forth October, 1948, he still awaits cards from the following VK stations to

awasts cards from the following VK statems to whom he has sent but card 2RZ 2PN 28LG, 2RS, 201, 2QP, 2TF, 2TI 'VX, 2MC, 2RX, 2DP, 2RR, 2M, 3RF, 2CV 2MC, 2RZ, 3DF, 3MC, 2EK, 3ZI, 3OF, 3XQ, 4Th, 34P, 4LL, 3FL, 6RR, 7CW, 2RE, 71Z QTH of VICH is RV Ratio Statem, Ernell, QTII of VI/CH is RV Radio Station, Errari, suppared an holding a card from him for a VK2 named Jock whose call sign not shown. (and related to a contact on 28 Mc. cw. at 445 GMT little is also not shown. Owner of card my obtain same on application to this Bureau.

The Amsteur Radio Club, P.O., Mhow ((+stral Islai)) skiles that can't for VV2 and VV7 arpas.

be raised in the next future. We will send and receive all Qua to German Hams becased under the cell his.

NEW SOUTH WALES

The Natember general meeting of the Division was held at Nature Rose on Friday, 26th Novem her, 1948, under the charamanship of the President Mr. Marrie, M. yers, 24. N. A. becture and demonstration of fun. mobile equipment was organized by Mr. Morice Bevun 20.R and given by Engineers of Thom & Smith Led. Mr. Brown apologised for the absence of Mr. R. S. Bope, Chief Engineer of Thom and Smith Led. and one time 7 RS, and introduced the guess' becture 3 Rr. R. X. Zocker. Zwker outlined the requirements of an I to system and followed with a detailed as-cripton of transmiter and receiver units iduatested by slides and black board it grams. This was augmented and their bound it creams. This was augmented to a most intending lemination of fin sections of the section of one of the given to members and made the occasion a neem

1948 FIELD DAY

To Time the American Way New York Company of the Co the Hams fravered up to app miles to se present.

The 144 Mc transmitter search was a centre of attraction. The transmitter being secreted by 217 and 2EO who had the experience of being begged in the process. First in was 23X and party, the In the process. Price is was han man party, we are a complete process. Price is well as a reference, which was not a complete dipole plan a reference, which was not a complete dipole plan as reference, which was not a complete price and comproved with dispole is was very effective, and comproved with dispole dipole is was very effective, and comproved with dispole darrays and six element parasitic bounce, which was not provided to the process of the price was considered on a Blanch Price.

The prime were prevented by Horne Meyer 2VA. The prime were prevented by Horne Meyer 2VA. Crystal Frequency nbeck: 220 pair of 807s, and second 2AET a SR4GY. Lacky number 2RU pair of 807s, and second 2SW a SR4GY Ladies price when won by Men 2AEN The cap for the traismitter rearry was presented to 2AX, and a SR4GY to 200 for second 2WH collected a SR4GY to 200 for second 2WH collected a SR4GY to coming the langest distance.

Thanks for the day store go to Oeo 2KR and Max 2KR for their work at Woy Woy! to Max 2KR and Max 2KR for their work at Woy Woy! to Max 2KR and the Max 2KR for their work at Woy Woy! to Max 2KR and the Max 2KR for specifying the beverage and to Wai 2KR as his assistant on the nervine, We can't mention everyone that gave a hand, but the Council thanks all these that assisted and don't forget the next one in

NORTH SHORE ZONE

After wishing all you goys a bigger, better, and and brighter 1949, with all sorts of shiny certifi-cates coming up, let me basten to offer apologies to 28Q, where call appeared in the November, 1948.

Low Drift Crystals

FOR

AMATEUR BANDS

ACCURACY 0.02% of STATED FREQUENCY

3.5 M/C and 7 M/C Unmounted .. £2 0 0 Mounted £2 10 0. 12.5 and 14 M/C Fundamental Crystals, "Low Drift" Mounted only £5.

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send of these noise in pixes of that delect voice of

Congratulations to Mr Gordon Robertson ZALA bis selection as organized of the Fire Brigade's Congentulations to Mr. Gordon Robertson ZALA: on his selection as organized of the Fire Brigade's I'm, govice. 28G kicks in again, with doings of the th's gong around his areas many thanks Bruce 24B in the midst of higger and better bewins, a four centure bridespined on .54 Me be of the atest 24G has moved from his sensal backyard starter for complete this careful on the sensal backyard starter for complete this section of his geometry. steet 23Q has mored from he senall backgard sharif to a condictable sevilson of his facused in vermelab. Hill now tridge a new horizontal beam sell occapitate senset via h. Johns can't work even 2120 completes senset via h. Johns can't work eve 2125 hard sapin, on 50 Me. Most of the loops have been laving of field, day with the Life on 60, the contacts an hour during the peak perfects being commoniate VIS, 4, 5 and 17 are being switch be as welcome as though a first trial would be as welcome as though a first trial would have been senset from the contract of the con-

2AET and 5ARR doped up a 144 Mc. rig for the field day, mounted the works in a cur, and and the time of their lives. The rig was p.p. 4C4s, artity coupled, modulated by a 5C2, 5V5 lineup. the receiver was a 955 super-rogen, with two and ctagge to a speaker While 3AET drove. SAER worked 217, NVW, EAGH, sout 25W. Vertically polarised dipoles were used and all conlasts were polarised energy SAET's call. As to the rest of the Feel lky, news, you'll find it all elewhere, in a

gamb att. the main DX representative in Mos-man and Oremorno. SNI healing for the west moon ZAND in a tall spin after exams and a heliday SOUTH SYDNEY ZONE

The v.h.f contest is still the main interest of the chaps notive in this area and most of them are on nightly pilling up the point. There will the contest of the point of the point of the The recent Interacts DX has also increased the interest on DM or 2 VW has now got he 144 Membelle gray intelliged. In the cut and openies from various locations at week well and openies from various locations at week well.

various locations at week wule 2ABC will, active on 28 and 50 Mc. bunds 2WJ now operating on 388 Mc. as well us other bands 7AO still experimenting with Quod Beam on 10 matters, with improved results, 2ABC works before you of DX on 20 metre phone. 2AB has been very quote lately, 2ABS is active on all bands. very quiet latery. ZABS is active to an consistent with new transmitter. Has an excellent five element beam on 144 Me. 2UV still active on 144 Me. but threatens to blow g hole in 40 any day, 2VA not heard lately. WESTERN SUBURBS ACTIV TIES

A Morry Kmas and a Happy New Tear to all!
May the New Year resolution be for all you good
fellers to supply more news than ever—ring BO399
Ext. 327 after 8 p.m. Monday to Friday inclusive. Amongst other familiar and homely faces at the Wyong Field Day meet were \$A2O, 2MA. 2AGL, etc., no doubt attracted by the magic of that one word—14 Amilable Loop! Took overconstant. sto, no doubt attracted by the magic of that one work-14 A mulable Latend Todd represented is PM.O's. Department and had a happy time with bown in stitches when also quite including and 2AGL whether he thought the fishing would be good. Warran, of course, had a walkit claske, ob no 144 and we must admit it could have been militation for a fishing root.

factor for a maning root.

In the subbrate AARU has the he.f. liebed, but
the subbrate AARU has the he.f. liebed, but
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th had a bad run with coax be t, but all are fremi-once again 2 WB has a land at 30 metre phone at week-ends. \$4.8R was heard discussing the profe and come of disposals equipment. 27D has done it. Gol infase t a gat, forwel the rig and is now engaged. 3AHB now has 18 mones on 40 metre, our this year. TOR atill these his hand on 20 metre phone.

EASTERN SUBURBS ZONE

2WR not heard much these days boy fitting 2WR not heard much these days boy fitting radio gas to yarish. 2RT has a new mod, uring phone on 40 2YF having trueble getting enough after them also new v.La. 2RF heard on rare occasions. Jack is bony decenting his shock.

2ATZ making up evn. 2ATG has recovered from vecent (Boass, can be heard pumping the key 2ME busy building feels great for 2EV. Harry has NMS thay Dillibring club gear for 2BV. Harry has spent the hart two months on this job. Still waiting to hear from 3DU with his new class B mod. I must applying for lack of dope this month, but hope to have more in the New Year (with the coperation of the leaps of the mass), also like to with all Barne the Compliments of the Sesson.

DX NOTES BY VK2ACX

in interesting letter to hand from 2AHA talls of his phone effort is the recent "CQ" magazine (ontest. Harold worked 89 countries in two days on 14 Me. with 195 contacts. On 28 Me. 21 countries with 77 contacts. Has open score was 39,525 points which is a very fine effort—congrate Exceld possing which is a very fine effort—congruis Barold its may be a going back to co. for the next test A four of his choice once were VPE, UX, OU, N. C. 22. Mill, VQL E. J., E. 2. Soil Fill. Hardel most of the choice once were VPE, UX, OU, N. C. 22. Mill, VQL E. J., E. 2. Soil Fill. Hardel most with the choice of the control of the choice the end of this column

The is still in the lead as far as is known here with 180 countries. If is latest catch, a very save one, \$U7AF located to Nepal. He was found on phone is the American phone band. \$HZ has now 148 countries, his latest additions being MP4BAB, HP1BB, VE3A and URIKAA. very, nice one heard by Bill was PL8MA in being ZhSAA His frequency, approx. 14,109 Kc. and QTR 0430 hours.

2VN adds ZCICL, HPIBR VPIAA and ISLAFW bringing him to 38 mores and 131 countries. NIII often not find much time for Ham Radio. 21X alch VPAM, OQ-RA and 10 24 for 40 mms a. 157 countries. Som using a three element rotary 157 constitute New using a three element rotary and his ARSS receiver account for the rare one we hear Dave calling and working. SQL is now W.A.Z. confirmed after receiving a card from UC4YN—It should not be long now before to see CV117-14 should not be long now below us see that covered certificate on the wall at 20L. Frank adds 1 PuCDI, ZCICL and FT4AB for 148 con-tries. Here it's 170 with FEAB, YSIGM and UESSI Skill no card from 2000 49. Bed an all mail felter to 0X300 referred from the d.lo.

VKDNR on Norfolk Island has been on now and again, and has been worked by a few of the gang He will be an additional essuairs very moon.

State of Israel is represented by 43.4AA The State of Innel is represented by 4.8.4.8.4.

Aki-Ali and a few others. A good one to large up year alove; for the official licing in the counter is the state of the gibbs, we have to a shat he calls Arab Palestine Well follows, that a few now, so a Merry Xuan to you all lacts and both off good JPXing in the counting year and may nor DX hands be always open—2.8.CX.

HONOR ROLL

1 K 2 1 C X VESED ... VA2QL ... \$ K2R4

ome UTHa to note:--me Ullia to Bour--YSSPL P.O. Box 222, El Salvador, NSING Alfonso Ordala Maria, Santa Ana, El Salvador. .Formosa), A.P.Q. 909, c/o. P.M. San

Franciso. HP-LH Bex 1616, Panama City. Miss Radio Marina, Asmara, Eri.rea. Tith & Lt. J. Adel Tussig, American Embassy,

VPNR VPO Sol, co. P.M. Miami, Florida ZEIJI N. N. Potterion, P.O. Shabumi (A2CO R. Nerra, Ptc. Derro 2141, Monleysdee NORTH COAST AND TABLELANDS

The Northern Gang were very active during the same control of the Variember, especially the Lis and invertage that on 30 Mc. The 24DE/ fill link is still operating and MPA beard at States except VKI and VMs. The band accorded take 20 augusts every 15 Kc. thumbing out betake 20 signals every 15 hc., themming out be-tieves of the 2 take is a new one in Be-1 angen using p. >07c. Ya his efforts in obtaining mass hangs a take. Harry set and, selected a nicely tunber-1 patch and rarted off two 50 footers. The bounce came cater, when the owner semanded the return of the timber, the masta baxing been received return of the timber, the masts baving been excess in the naturn—It cost, a lot of explananty before a settlement was reached. JFN hopes to move into an a.c. area after the Kmas vention 2ZX beings a lazy II on the U.S., compared his new receiver with a 640 owned by 2FN and quite happy about it 50S risked Port Macquerie and Reuspeer, 28H enjoyed two weeks' holiday mostly fishing hopes to have the rotary going by Xmaa. 2XO re

cently moved finds a new shack, out of floods' received providing the ac. herey cm, won't stop here consists and providing the ac. herey cm, won't stop here compliant. All Times are consistent and the stop here compliant. All Times are consistent and the shade of the shade of the stop has a stop here are consistent to the stop here. The shade of the shad QRO. 2ZP very inactive, 2GL in of Moree, has a fine sernal on 4th

NEWCASTLE ZONE Newcastle was favoured with a vasi from \$XU, 21C, 22M, and 2VL on 14th November and we are sure they had a nice day. Local secorts accompamed the visitors on a tour of the shocks and eventually saw them on the homeward track. We all lone the XVL riceed the shop Jind itions for the month here been very bad SFE is erecting a new antenna of his own de sign, nomewhat like a quad STE has some higher voltage these days. SEE had the hard nick to less bes trange, on at the moment with a temporary supply EADX putting cut a territic signal from a new heam, EAQ was heard from there the other a new beam, 23.9 was heard from there the other certaing. 28.75 after a few wears included was the greamen in his modulator, his motte now—no mud moduled va.ve sockers, 28.00 experiments..., smooth the house. 28.72 has live up on 10 meter should and awatting the claim's 19.00 before re-building. All the best for the New Stur from the Newsquite gard.

COALFIELDS AND LAKES

All had enjoyable day at Woy Woy and look forward to more outlings in the future. 2KZ at present in hospital at Newcaste, nope you are better he fore you read this Max. 2YO also in hospital at Kurri, tall of stone in the mine was the trubble. Kurri, tall of stone in the mane was the trouble, hope you are about soon George. EAF not heard much, has been away from tune working. ETE just returned from three weeks helicity at Lakes. eard on ase old stamping ground insard on his old stamping ground 15 rector plunes at 22Z not hereof much out possibly begging into about on 10 meters. But on the done is not of listaning and the free in recent words when the hand opposite the stamp in the s change creating a lot of interest.

change creating a lot of interest.

This haved he north more of n. in the worst feature, a more a 30 km cause generally for the feature, a more a 30 km cause generally feature from the feature of the feature feature from the feature featu IR, MARZ, SAMU or SYL ku

SOUTH COAST AND TABLELANDS Many of the stations in this Zone were heard in reports including new calls 2ALN of West

this mosth including new calls 2ALN of Wes Wyalong and 2AOX of Worsouth, the first with who may and TAON of Women, the first will be a second of the term of the second of the term of the second of the term of the t The latter raised cheers from passing cars.

The inter raised oncers from passing cars.

2F and 878 both work to be, statios SCA.

The D3 bag bit 2Ff and be is off to a good state,
with LSBEC for rais Sufe D3, contact 22G covers to the control of jetty at Lare Howe 201 worked a .0; he is thanking of doubling to 5: He. What about some news from Wellongong, 2WP the coly station hourd from there 2AEE QBL shearing hears more 2DO received a nice exed from HK1FQ, it's real y well worth having

VICTORIA

The Genera, Meeting of the Division was held on Wednesday, 1st December, at the Melbourne Tech-nica, College. The first part of the meeting com-prised a talk on "Blectric Shock," by Reg Busch nich. Collège. The hist part of the meeting com-prised a tak on "Electric Shock," by Reg Busch 31.8. In earling generally with the effects of ele-pointed out that the intensity of the servation produced by electricity depended mainly on the value of current flowing, rather than the smooth of potential difference (voltage) required to pro-luce it. The effect of electric currents seem to go there it. The effect of electric currents seem to go dure it. The effect of electric currents seem to got through three stages as the amplitude of the cur is a creased

The first sensations are produced with a.c. (of power frequency) at a current of about eee mails ampore, with dc about the times as much current as required to produce an effect of the same incessive. The red of the ascend stage is nearbed when the In rece of the section study is related when the received of the received with a received with a received with a realized the ret go "current, is about 5 milliamperes ac., the "freeze" of "dage as reached, at which it is found of "freeze" of "dage as reached, at which it is found effects are produced by "far go" currents it first are only allowed to presist for a short time, but written as the "Treese of" value will cause death arrange at "Treese of "value will cause death." allowed to persist for periods greater than one 201 15:20

Mr. Busen, speaking from experience, described now it feels to be "caught up" on m.c. and on de. live equipment. The need for care in dealing with rail o equipment having high transion power with rail of equipment having high tension power supplied was atreased, and changed litter conden-ted particularly need to be treated with great cuttion. Mr Basch then described the steps to be taken in the rescue and respectiation of persons attraction to unconsciousness by electricity. The service appeals action was atreased and the Schuler rection of applying artificial recipitation was deriction of app ying artificial respiration was described in detail and demonstrated on SWQ, who to reterre to set as a "body"

to receive n act as a "body to the life great inter-tion in the discussion following the talk, great inter-tion of the life great control of the life great inter-tion of the life great control of the life great con-trol of the life great control of the life great con-trol of the life great control of the life great con-trol of the life great control of the life great con-trol of the life great control of the life great con-trol of the life great control of the life great con-trol of the life great control of the life great con-trol of the life great control of the life great con-trol of the life great control of the life great con-trol of the life great control of the life great con-trol of the life great control of the life great con-trol of the life great control of the life great con-trol of the life great control of the life great con-trol of the life great control of the life great con-trol of the life great control of the life great con-trol of

TECHNICAL ADVISORY COMMITTEE Frequency Measuring Contest.-It is proposed to

condition a frequency measuring contest shortly after the next standard Frequency Transmission from JWI which is seneduled for Tuesday, 25th Jan-son, 1949 Publicity will be given to this contest ster 3W1 over 3W1 It a expected that the contest will be run or similar lines to these organized by A.R.R.L.

CHO of strates the to these organizations of A-para-Laboratory Workbroches.—These have now been remplifed by a gang of enthosizati working with TAC member flavold Webber 3PW, who has fostered the project percentally, right from its in explicit. Barold is also to be comprehensed in the complex of the new forms. the jub of organising the creetion of the r

Library — Members are remanded that among the literature available from the Library are mar-Spooks on military equipment described in detail in these Some of ine equipment described in detail in these excellent has absolute are (a) ATS/ARS Transactions and Receiving equipment, (b) ATA and (2) Reach office frequency Measuring equipment, and (c) Bends office Frequency Measuring equipment type BC221X LADIES COMMITTEE FORMED

LADIES COMMITTEE FURNELL
In response to an invitation issued to wives of
metabors, a happy gathering took place at the
Romes on Friday, 3rd December

\[Ladies Committee was formed to seate members in arranging social functions and the appoint
ment of the office-boarers of this Committee will
be made at the nest meeting on Wetherday, 5th be made at the near meeting on Wesnessay, on January, s. 2 p.m. at the Booms.
Al. indies who are interested are invited to join in and attend future meetings.

VICTORIAN QSL BUREAU SERVICE The following information will be of interest to Vactors in Amatours

OUTWARD.—Bring your cards into the General Meeting OR Post to Outwards QSL Manager, Mr F. O'Dwyer, 190 Thomas Street, Hampton, S. Price as 4d per card. Cards to V&S are free INWARD. Co.lect cards at the General Meeting OR supply Inwards QSL Manager, Mr. G. Roper, 20 Lucas Street, Caulfield, S.E.S. with stamped



BRADBURY HOUSE, 55 YORK ST. SYDNE

T.A.C. MEETING NIGHTS

I. S. A. MEETING MIGHTS
II. Is good that the Technical Advancy Committee of the Visionian Briston of the W.L.A. bold meeting the Visionian Briston of the W.L.A. bold meeting the William of the W.L.A. bold meeting the William of the William of the William of Willia

4th Wednesday Receiver Group.
5th Tuesday (If such), Practical Work.
VKSWI will announce the programme for these

nd, vidual me, times in forthcoming breadcasts. EASTERN ZONE CONVENTION

CASTERN ZONG CONVENTION
Remembs of the Enterth Econ and at I description.

Beautiff of the Enterth Econ and at I description and the Enterth Econ and the Enterth Econ and the Enterth Economic Control and the Economic Contr

lar measurers gang cours not may overlight, and left without solving the mystery of the eights XYLs of 3DI, 3QZ, 3PR and 3LV, aminted by Dawn Colley, prepared a testy home-cooked supper, which was much appreciated by the members which was maken appreciated by the measurement. On bonday merming the going gathered as 2 Direction of the control of the cont

the XVIs.

After tunch, a short Field Bay was held, but no outside sags except 3AEM and 3Cl were beard or worked. Afternoon see was on at 4 p.m., followed by a short sale of Disposals gear, after which the gauge departed, leaving \$10X to vinit \$3PE, and \$US/VI, to continue their stay at \$US/VI.

Elseven Zone members who attended the Con-vention were VKSs WE, QZ. Ss., BB, LV, TH, PR II, US, VL, BH, AEP, AHN, ADC, and two asso-olates. SDI is to be congrutated for organizing, with SPRs assistance, such as enjoyable programs. and the XYLe for providing such tasty means and the Aris for providing such tarry means. SOI reports that he sworted 14 DX 50 Me. stations are two stations on 144 Me. on 5th December, 543P has a new attendand to working 69 on 40. Would those members who can't join the low-kups on 8550 Ke. on Sunday highles, pleases send agest to 2US Red. Mill. for inclusion in the sond hows to also see all fine for inclusion in the magnitude notes. The sub-Branch held its inveiling on 6th December and those attending heard a lectic on inclusion, and a description of a crystal stabling of 6. by VKSKY.

stable line vi 6. by YULKT.

Comments of VAUSA en the Convention—liange
Comments of VAUSA en the Convention—liange
The Comments of VAUSA en the Convention—liange
The Convention of the Convention of the Convention
The Convention of the Convention of the Convention
The Convention of starten in fine form about 3 45 p.m.

we extence in this town store 5 of p. Par Ben-Meriving at Turnilgon we picked up. Par Ben-Meriving at the period of the period of the Osdic gate it the works at the request of, am added by, his matter in the best seat Well what a bout trip, grounds, y entering invery green had a bout trip, grounds, y entering invery green had a bout trip, grounds, y entering invery green Marwell, Bodiera, Xiliant were deply custed with our dust, and as the super Ferd rolled round the heads up hit and down date, everyone felt fine. Then a most disturbing noise, fortenting that or least one which had come off, prompted the back neat drivers to suggest Guide might show down and layestigat. Upon being convinced that it wasn't

tust another rode remark, an investigation disclosed the back spring had shown preference for one particular wheel and so anoved over into its works. We weren't worsted, for energone know Gaule would have a most complete kit of tools and so he search have a most complete Rid of tools and as he essential of the new portion, and there we such or rescaling or of the new portion, and there we such execution that only worked on the Bomper har, plus two caust typic levers. He Editor, so car's pierit the story and he recursed as Tree Clark and 283 hitself-story and her recursed as Tree Clark and 283 hitself-spieling up and down three lightlin (** belight) to be the property of the complete the story and the story and the story who cannot have a small blee are wishe cannot due with dust as they ignored our pitting qualities. Our market upon them, and we hope their electrolytics behal down and dish to delir power transits.

Then the band opened up, and we were lifted a big track which took us a few miles. More mill a beant car answered our prayer and a another lift. We fluttered this driver by ing him to the "pirate" types in the blue gave us another lift. We flattered this driver or comparing him to the "pirate" types in the blu-car, 40 much so, that his mate who we also assured " a a real gentleman, confided that the driver was mains other than the garage proprietor at the township we were heading for

The Convention dinner, according to the time so we explained ernything to our new friend sub-back be went to gather up the rest of the gang who were forlorally waiting for something to hep pen. Well our great new mate (should be a Ham). pen. Well dor gress new mane canonic or a mamy, after hearing our fears that, the visitors from the City would wold all our dinner if we were more than an hear late, he said, modestly, "I'll get you City would wold all our dinner it we were more than an hear late, he said, modestly, "I'll get you there." So he fired his jot turbines and covered the remaining (wenty odd miles quicker than the bloke who comes back on your frequency jost as your are about to snewer that very special OZ par-your are about to snewer that very special OZ par-

So we arrived about 90 minutes late, and found a first class feed awaiting me, some dreadful re-marks, and a good turn up of visitors (complete with Disposais cigars) from the City, who were with Dubothin cigate) from the City, who were the better types, because our dinner was intact -thank goodness, for we were very hungry, and it

Next day the 50 Me. cranks stoked up ready to convince the doubting Thomason just how good that wonderful hand was Keith 3HK had his portable car there, with a dipole attached thereto, which as it hand over at the top, nextly tipped his tiny car over it was just big ecough to hold Selth and his cubiction of 1986 foothing mobile 50 Relth and his cubiction of 1986 foothing mobile 50

General CRICK XVI. of SVI.) and Per had a suit Gwen (Sus, Ario of Svi.) and Max man a same case full of assorted parts, said to work on 6. When they switched on the vibutor, Keith's re-ceiver was struck dumb, but said person was (co much of a gentleman to say what I would have

Percently, my impressions of 6 metres are well-er-ANY sig is regarded as a "whale" of a sig, er-ANI mg is regarded as a "while" of a sig-great excitement provide if no >0 sig manages to erash through the super-regen, his and vibrator hash—crem if and sig comes only half a mile, it consists mainly of twirling this of ranty conduits as consume mainty of twisting that at pany conduct on the end of a stick, turning howling knobs on re-evers, and optimistically hoping a sig will appear from some far away place, or the band will open up. Worsterful things are said to hoppen when it does. Gave me the counter of good of 80 metres

After the Custention, and afternoot refrondance, were disposed of, the fire carless soils were planned, with sunday jouk and gets, too the beck of a few bades conse-mo one had a big cut. Have consequently as the consequence of a few bade property of the consequence of a few bades of the first property of the consequence of a few bades of the few and the consequence of the few and the first property of the consequence of the few and fe them SQZ Graham at Thiralgen also, where the weekly some hookup was in programs. Great frivoilty pressible while Mrs. Co.jr feel us on sand-wichen, blaced's and cheese until Graham, feering we might blow his rectifiers, rigned off. So, all ye who didn't go, see what you missed—but make site you strond next time.

NORTH EASTERN ZONE

When JJK opened up the Neutribe less of the State of the

GLO-RAD

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Cay to Jines work to colons after the strongle-STW as more of the Bot is it is present one-bations (2C in France and Carlot and Carlot and ADW all nearly aftered for Woodcad, CLI 18-20W all nearly after the Woodcad, CLI 18-20W all nearly after the Woodcad, CLI 18-water STR is on helidays. 3DO has new made you NTD cords occord one and either boant tower water, STR is on helidays. 3DO has never made with the work of the work of the work of the hall never transmitter for 144 Me., SABO his only center to be real 144, 2DI now town you will be the work of the work of the work of the Me. 1863, WKB. 1864, and WKBs here been worked CLP 2DI. and ADV 2DI was worked 3DB. ns crobs, 6ABA and 3ABC on 144 Mc. On 50 Mc. VRS, VRS, VRS, ARA and VRS have been worked 3BM on 50 Mc. And 3AFF have worked 3BM on 50 Mc. 24BC, while portable on 5th, worked VRSIM PLI 5BF, and 4BT on 50 Mc. And 3ACW. HII, NABA Portable and SACM/Portable on 144

CENTRAL WESTERN ZONE

D specials got arrived in a most imposing case and opened up OK. We got most of the gran ordived, and those that received some, seemed well satisfied. The Horshom Convention effects are well estated The Renkous Cancastine offects are vill, with me a SAXT and sweap get over \$25.00 to 10.00 to 10.0 Me. Fit were and had much lack, keep trying boys. SARM Is going culet on ridlo for a while and cetting the hervest in. SYM has streets, a mag or two with the four element hearn for 50 Mer; the beam is 60%, but the mast is not, so it looks like some extensive alternations before it can go up "amount and Familiest described" on Stawell a few A marginar feature for the control of the control o

SOUTH WESTERN ZONE

A look around the since after they left ago still silver, too much work selling radios Jack 33A working DX on 10 and 10, got over 100 countries by Norm 35Q working on gene for 144 Mr., but they stone for a QSO on 40. Frank 32U too but working at PO. Sking up phones the YEs carek to. 3ALM now putting up super 10 meter rolsny. working at P.O. fixing up phones the YLs. tp. 3ALM nam putting up super 10 metre n lose o.t for 3VA, heard Bert was only one worked DX on 10.

SDS is having QRM from John of SRW and Schit know what hand to "what his wind with has of going up to 10,000 Me for a change Hearl NAST and pant front to back ratio with has 11 meters going up to 10,000 Set for a change Mearl 3 VeV and pour frent to back ratho with hes 11 metre beam, only spaced a few inches apart. Ven heard Allen SYT is a keen 10 metre bird and working QRP intely in other directions. Jack 3 WX going Mills. 137 for a loom 20 metric lifts size, was group of 100 Mills. 130 M group coursils—of X mins to lovez, and has been out of the size \$200 feet up. Ted SPS, the real old timer, FSC receiver porking 100 per cent, on 20 to but transmifter costal custod share kopes to Lat. Transeffere exist control show with 100 warts. Let all X putting up new upper rotary beam for 80 or 16 feet steel former, at present time. Let is usual an 854 in final working PX as exist. A state of the steel former, at the putting time of putting up Yee beams. Rev hat pleety of sparse on farm and had a new rid vector of the

thin 30t been off air lately probably due to contribing troubles, or is in that 114 transmitter and receiver late been taking up space time. Indy 380 to w knows what a QSO is like, had a QSO 138 to there with a QSO is like, had a QSO with table for house 10 minute the other states with table for house 10 minute the other states that notes only one var, which may is that factly that notes only one var, which may is that factly that notes of a right to Know who is gating to scotl the factly the chap who is gating to SCR227. John is pertiage to a 16 element beam or lop of 45 feet attick and by varies applications are not the best near STA, SGR, STW are going to spen 31 TH new shade, (randemliste, vertical assembly to the second state of the state o be was drinking contents of bottle before cracking it on shack. Well boys bet's know what you are foing so as I can put them in "A.R." Address all he was driving concerns to constitute the lit on shack. Well boys let's know what foing so as I can put them in "A.R." A dope to 3LT before 28th of each mouth In the S.W. Zone hook-up on 5th December, 3BE, 3WT, 3ALG, SYE, 3IO, SUT took part. We would like to see more fellows in the monthly

Geoloog Ameteur Redio Club

Li a mestamono de la companio del companio del companio de la companio del compan and took 24 hours.

and took 24 norms.

Cheegangy Metwork.—On 19th December the
Energy Metwork.—On 19th December the
Thouse who took part were: 55U less transmitter
and portable. ABSU, 648PF, 35U, 36BE, 36T, 16
26U, 343P, 39U, 51P, 34KE, and 39T, in concomplete the second of the second A newcomer to the Geelong gang in SABK Dick Heighway, who now has a portable call of SaBW.

QUEENSLAND

The November meeting of the Queensland Divi-sional Council was beld, for the first time, in the sional Council was beld, for the first time, in the 121, and 4CP were admitted. Pederal Councillor read recreposal consistency of the Luttorna Cou-stitution and the proposed Correspondence Course 10 CP. Quite a discussion took place on the sub-drivious of books for ew and places. The new rooms at Victory Chambers will be upon to members from Monday to Friday between the hours of 12 p.m. and 2 p.m.

General Meeting for November was held in the Elizabeth Street room on the 26th November, There Elmaheth Street room on the 26th November. There are histyr-siz members present. In the absence 4 4AW, the Vice-President 4KB occupied the rhelf: 5n norcilon of the winter edition of the Call Book was won by 4WG and netted a little profil i - the Dresiden.

Members are obvised that so from 1st March 249 all subscriptions will fall due on that date

Trophies in connection with the recent D.F. had I had I had a tric Earth, and 4ES a 30 watt Transformer. The general business of the meeting was followed to two lectures, one by 4KB on receiver noise and the country of the William to the country of the country the count by 4x2 on the Quod Beam Internation countries countries the countries meeting for December was hold on the 3rd December, harding book brought forward a new bocames of the Must Party which took place is the 10th December. The Secretary separated that the beames of the Division was so heavy most that is as shart seen large model by very sections. The to be stand servicing about the very secretary matter of forming solv-branches exist discussed and it is hoped to form sub-branches in the larger country towns. The matter is still in the embryo stap and jurifier developments will be amounted over the contract of the co

Will at a later date. The formassication with the formassication system to provide communication system by America episation to give anlatance in times of emergency (e.g., lands for fighting, flood warming) was located. Further information in being cought from the variety Discussion on the matter in the Sundry marking look in a Jarved the Mea to be a day marking look in a Jarved the Mea to be a

Letters of appreciation are utill being receive from G land for food parcels seek by this Division. The Stubber Man of the month is 4FN Frank thinks mothing of holding 1,500 voits. Reckon he has an open circuit in bis relay—they still on dock has an open elevate in his relax—he's still on dose anyway. Whilst we are on the subject of 4FN, let us report that Frank, using his portable rig 4MF, had 5 besto on the 23ct November, making 144 contacts, most of H DX. But the mostly was? all roses for the operator of 4WI for another high power transformer gare up the ghost, but he still has a long way to go before he can work DX wit, the smoke pearing out of the rig. At least that is what 47g did' ZONE NEWS

Mackey Zone KW Herrs reports 10 meters and a second to the law reviewed in a second to the law reviewed in a second to the law reviewed in the control of the law reviewed in the law revi

Townwills Zont.—(4D) is the only one in this ame inferested in 6 meters, and reports other ac stricts very quiet. The President of the Townwills Radio Club. Mr Greenwood, puts in a lot of spare time listening to the 60 Mc. signals. I handle Cone (4W6).—Noncomer to the zone is 45.7; all the very best in the new venture Albert. as 42.1, att the very cost in the new vectors shoet-dWS just received a few new chasee—looks like a complete re-build Bill? 46G has returned from his holidays and still using the good old 80 ft. a size. Temporarily located in the sone is SAWO— looking for 144 Mc. contacts.

looking for let Mc. crosscots.

Seeth West Edward (1983), 1983, 19

only morning.
Bundeberg Zons (4Xe) —Les is very notive on
28 Mr. and reports that the ree beam gives better
results than the vertical. The Bundeberg and Districk Annateur Radio Society held its econd untitotic Annateur Radio Society held its econd untitotic Accument. 40°C is re-building, a new if will be
complete with band swift-citient for 8, 8, 7;
44, and 28 Mr. abunda 40°M critical on 7, 14, and
28 Mr. of REL active on 28 and 50 Mr. on the obsidiory

Thanks Zone (REE) —80°M Dan. 100. revolves. carty mornings

new antenna array for \$8 Mc. 63 Jesing.

Castrel Zone (4RE) -4BD has two receives new, an ART and a Crowley, and according to Jim has a very 5b. rig. 4LN active on 14 and 59 Mc. 4XR chasing 14 Mc. DX Newcomer to none is 4EE very QRL beliding and does not expect to be nettee on the bands until 1849 SOUTH AUSTRALIA

SOUTH AUSTRALIA
The noises that morth an required by the Editor
to be in his hands a little erriter tant used, not
therefore I desained cover if a green't mortage, not
therefore I desained cover if a green't mortage, not
stem of news however can be channed to "first," and
that is the fact that flows fively for Lattle Wart,
that is the fact that flows fively for Lattle Wart,
earlies) is bremaning the fact float all the governtant be has left at that GPI slight the provent
has be has left at that GPI slight the white of the
R.I. is due little watte. However you can't keep
of any green who was peaking the cook as the gas. a good Ham down, and I have just heard from one of my spice who was passing the stack as the R.1 was leaving, that Ross was in Q80 with Laxous and the other place, and at the same time worting fare-well to the R.1 and utilising als renalizing hand to firstifically restore the high rediagre windings of a final dramay, which you will all agree its ina final frame, which you to

mean feet even for a "professor,"

News use enrived via the grapes one total units
statement for Council next year will exceed the
season for Council next year will exceed the
necessars. This is good news to the present Council
memblers, as ence blood is always required in the
rooming of any organisation, allbough sometimes
more blood turns out to be somewher meeting and loses interest after one or two weeks. Anyway several of the stalwarts on the Cornell would appreciate being voted out, as they are showing the caste being voted out, as they are showing the effects of heling the pack-some for the large majority of members. Don't be scared that they will be her if you don't support them a the voting

Talking of Council duties reminds no that it was a little slow off the mark ut the last general meeting and was grabbed for a working bee at Doc's QTE, in spite of my protestations of heigs very very busy an that night. The job was connected

with the disposal correspondence, etc., and not collect job that such by guing. While, did I now there job the standards, multiple states that the policy with the policy of the left way to do not may also particle. The standards were the policy of the left with the left way to do not seen any also particle. The standards were the left way to be seen as they be seen as they be seen as the left way to be seen as they be seen as the way to be seen as they be seen as the way to be the left way to be seen as they be seen as they be seen as the way to be seen as they be seen as the way to be seen as they are the seen of severett the could make the left way to be seen as they are the seen of severett the could make the left way to be seen as they are the seen of severett the could make the left way to be seen as they are the seen of the seen as the left way to be seen as the seen a

It is a yet, but the general notting cannot be written by a low full offerent blessoon, but workers by a low full offerent blessoon, but the control of the

had of it. The cases steps from the heart flast course of our last flasts it was step from the cases of our last flasts in the step flast in the cases of our last flasts in the cases of t

A couple of moths are I mentioned that there were two nature from Mi Gambler for that the property of the couple o

The Competition to real who go the very le my singular and the competition of the state of the s

the Council have occurred. Gordon Bowen (SEU) now becomes the new Treasurer, Dr Ross idey (SAI, Ross to you) becomes Programma Organisar, and Tem Laidler (STL) has been co-opted as the

The usual thing to do as this period of the order to the vite on the obligate of the Sorthern own in the vite of the Sorthern on a sun of the sorthern on a sun of the sorthern or a sun of the sorthern or a sun of the sorthern or the sorthern of the sorthern or the sorth

as where matter (two tes coppe.)*

Kern his resident on this these motion is being the second of the

It's a bit late I know, but still very sincere, when I say "A Bappy New Year to all." I respect that was will all have to put up with my borbling for another; review months in the magnation (I hoppi, another in the magnation of the president ensure of all, "Amagnatory Endio."

WESTERN AUSTRALIA

The November meeting was held in our new room in the basement of Padbury Buildings. Corner Q. George's Turnee and Eing Street, on Monday the 30th. There were 42 present, and new names elected and welcomed were 62X. GRP.

and SIM. Good show!

The big item of instruct was the confirmation of the uninning of the Lambert Prophy (GFL, now normalized to the confirmation of the Lambert Prophy (GFL, now normalize to have a 64 Me. GGO contaide, this State-Versall), the first VKE to work Interstate on State was SIM who will receive a permant from the case SIM who will receive a permant from the SIM and SIM with the SIM

SA discussed the earliest of certain "connect cal plinates" in the Amateur basels, and reportual plinates" in the Amateur basels, and reportual processing of the PE. All Amateurs are encouraged to log these commercials and send in A good response was made to the formation of a VES. Datergreecy Network—SEU being country organiser, and SFO in the city.

organizer, and 6FU in the city.

Lonospheric prediction, as printed in the "N.B.

Lonospheric prediction, as printed in the "N.B.

Lonospheric prediction, as printed in the printed compiled for C.S.L.R as requested by them

Suggestions as to how YEE case with the 1949

Romenbrance Day Contest were discussed. Comprehensive predictions of SW for the high-rel

The next meeting will be held on January 18,

and on the filted Torostay in each mount from

the common is not interesting account of the 1 years of Amatter Radio. Curine recorded his Dr. Terrary of Amatter Radio. Curine recorded his Dr. Terrary of Amatter Radio Curine recorded his control of the control of We wish to take this opportunity of wishing all our readers a Happy and Prosperous New Year, and may sunspots never shine on your shock during 1869!

PERSONAL TIES

The Annual Disner for YNG Division of the Manual Pattern of the 2 Percentage of the Control of the Manual Pattern of the Manual Pattern of the Manual Pattern of the Pattern of the Pattern of the Pattern of the North of the Pattern of the North of the Pattern of the North of the

Amateur Radio Station

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This log book has been designed to thill the need for a standard log. Radio amateurs and experimenters will find that they can keep their log books uniform while at the same times having on housd a permanent record not only of experiments and 650°s, but oldes of australanding work done by the station—racords that can be shown with piles.

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* Radio Handbook Here is another publication of In-

terest to the radio amateur. Many servicing problems that confront the technician are dealt with in this reference book. Size 7½ in. x 9½ in., stiff cover bound. First edition.

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Note: Second edition available early
1949. 15/- plus 1/- reg. post.

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To Ameteur Operators and Radio Experimenters, Mingay Publishing Co. extends New Year Greetings.

wasle I tree from Merredan Dodn't see very march of ook Val, but we did notice you fature with march section of sandri. Insers was a fee of open down and as I a few wite words to say should be tree of the creating. However, the words to say should be tree of the creating. Bon never langhed so much lefter. The best wasle tweek but you should have seited some of those jokes!

GVZ at a world prin for me talk which was en the wine recorder. Direct took it in good part 500 h a. a generage with a couple of quie section. What was one for the holges MAT GRE bill for from prin the festivities. Betth to the state sum of the progen state was the first term of the first state. Set the first state manda fillh toll us at about conting the or the article down over by the hereist along with SKM at 4 5PW. Here Hard pott on a magicant's GKM at 4 5PW. Here Hard pott on a magicant's result of the state of the stat SHR toll us al. about nothing and be

CHT go LA weigt for once. Jim was a triffe of the road, it case the band came good while a way't mutal 680 organized the group are riversed on, fool Was Bert's fore redy Angrefy 1 well on fool Was Bert's face reff any AAV one of me training saved the straining 65A one of me training and to train the heat of templates to be wently normals. When a me did you take home flagt Wass Layers had 500 m crossing meter? ASP where he are compared to the mean of t o send QSI, cards by air mail! Our worthy prosiLot 6WH had a few mouthfuls to say He tailed along with 6AG Yes, 6AG had tickets on himself 5PW celebrated the successful termination of his record examinations. Congratulations on your R-Sc com f b. Lot out DX, here comes Ray 16SN had a pocket full of wire pumber. He got quite a few of the boys is trying to work them out We found Bob was hot turked away in a dark corner under the collar, just why, we don't know.

share the center, just vary, we don't know.

CKE put is an appearance. Pitased to see you there Val, and hope you can get about to a leve meetings during 1949 CFP here't concluded the meetings during 1949 CFP here's comboded the said only just in time 6811, had a different kind of beam. For yound elements and a folder elbor. What was that about "spornide pea" (or Menu) Harry's 671 collected the Succurries, in insulted Harry's 671 collected the Succurries, in insulted

wafers, acction of ware guides sud micropups! GCK was looking for a male on the "lolly ares Just as well you didn't see me Col There were v. Amsteurs and about 10 visitors present, and his 11.39 pm. the two maks were drained of a the thought everyone had a polly good sero-log. The "do" elseed in orderly fashlon. All the hands were strangely quot on Saturday, but on hands were strangely quot on Saturday, but on

Sunday we did hear one or two of the lads back in their usual places, among the QRM You will be reading this in January so here's hoping you all had a very Happy Christman and now, that 1949 will bring you need 100 watts, a cotary been, a 15 tube de cretter, DX CC and conall silice of Pro-perts

TASMANIA NORTHERN ZONE

The first official uset of State headquarters officials and members was paid to this zone over the week till of 20th November Amongst those making the trip were Mr. Lon Jensen, our State President, and

POWER TRANSFORMERS . . .

600 Volts aside, 250 M/A. £3 5 0

POWER TRANSFORMERS and CHOKES Re-wound-

Phone: UL 55 0

880 Volts aside, 300 M/A.

1250 Volts aside, 400 M/A.

Tappings taken out where desired.

Reasonable Prices

We doe Brown, the State Secretary The visit opused officials, with a meeting hed in the Laun cretten Y M C.A. at 8 p.m. on the Saturday evening Mr. Len Crocks, the Zone President, officially well remard our guests and Mr. Less Annen replied on

Owing to the various discussions and meetings held before to formation of the zone, no problems arose and the meeting was confined mainly to dismendons on tarious nitrests affecting our Division as a whole. Mr. Jor Brown gave us a general and the Division's activities over the procoding six months and the meeting was closed to time to allow all those desirons of so doing, time to sample the local brew before going to

close in number the local here before going to human the super this converties could be break above. By the thirt high, and the third the super thirt has been about the close of the super thirt has been about to play the super thirt has been about to play the super thirt has been about to play the super thirt has been about the time that the super thirt has been about the time that a market of the same fill the super thirt has been about the super thirt and an outside that a number of the same fill and the super thirt has been about the super thirt put Throughout and super thirt has been about an an account the super thirt has been about an an account the super thirt has been about the super thirt has been about the super the super the super thirt has been about the super the super the super thirt has been about the super the super the super thirt has been about the super the super the super thirt has been about the super the super the super thirt has been about the super the super the super thirt has been about the super the super the super thirt has been about the super the super the super thirt has been about the super the super the super thirt has been about the super the super the super thirt has been about the super thirt has been and the super thirt has been about the super thirt has been and the super thirt has been about the super thirt ha

My the last moveling of this some Mr Len Crooks resigned from the position of President and Mr. Too, Brooks was elected to his stand I feel quite stree that all incombers will give Mr. Brooks the same support more right our past President.

Don't forget our meeting nights are always on the second Friday of each month so there is no call as An excellent itinerary has already been arranged for 1942 with porty of interesting

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FREQ-M

3533

100 G

TRANSFORMERS, CHOKES, ETC., Manufactured to order. Following stock sizes available:

SOLVE YOUR MAINS TROUBLES WITH AUTO TRANSFORMER

Tappings at 110, 190, 200, 210, 220, 230, 240, 250, or where desired.

200 Watt £2 10 0 500 Watt 1000 Watt

A few more oil filled T.C.C. and CHANEX Condensers are now available in the following sixes. 2 MFD 3000 volt working £1/12/6 10 MFD 1500 volt working £1/7/6

2 MFD 2000 volt working £1/5/0 2 MFD 500 volt working 5/-B.T.H. 10 HENRIE 250 M.A. 1000 volt CHOKES £1/5/-.

Crystals as illustrated, 40 or 80 metre, AT or BT cut. Accuracy .02% of your specified frequency £2/12/6 each .. £5/0/0 £2/0/0 Special and Commercial crystals. Prices on application.

CRYSTALS REGROUND . . . £1/0/0 each

BRIGHT STAR CRYSTALS may be obtained from the following interstate firms:-Messrs, A. E. Harrold, 123 Charlotte Street, Brisbane; A. G. Healing Ltd., 151 Pirie Street, Adelaide: Atkins (W.A.) Ltd., 894 Hay Street, Perth; Lawrence & Hanson Electrical Pty-Ltd., 120 Collins Street, Hobert,

1839 Lower Malvern Road, Glen Iris, S.E. 6, Victoria,

A.W.A. SPLIT STATOR TRANSMITTING CONDENSERS, high voltage £2/15/0 cach SCREW TYPE NEUTRALIZING CONDENSERS (National type) to suit all tripde tubes. Polystyrene 19/6 each Prompt delivery on all country and interstate orders. Satisfaction Guaranteed

RADIO. K. G. Allen (late R.A.N.)

Page 26 Amateur Radio, January, 1949

FIFTY AND UP

NEW SOUTH WALES

The menth of November provided quite some interesting activity which included WKS stations actually contacting VKS4, thereby being eligible for the coveted W.A.S. on 60 Mc. We understand that VKSNR was the first to be so fortunate and we would take this opportunity of offering congrate. we would take this opportunity of offering congrai-ntations on this worthwills enherement. Since this contact, we have it on good authority that some half desser Nãos have also qualified for W.A.S. on 50 Mc. So it has happened at last! which proves that careful observation and attention to all details, in essential for reliable v.h.f. contacts

Sporadic E reflections has also been responsible for N.S.W. statices contacting all other States (ex-cepting YAS) during the mouth and towards the latter part 2L signals have been heard and worked at several Sydney and metrogolitan locations.

at several Sydney and notropolitics Docations.

2137 in Mactoma also was very noncessful with
ZI, taitloop, contacting as many as 10 in one evention. This should help considerably to said come
and SRU also term to be foling very well in the
contest, but we believe that come Sydney propile
have quite good scows and the final results abund
as consistent of the second of the sec

288 Mc. has suffered a reverse during this month as far as activity is concerned, but "dichards" such as \$12°, 2AEC, 2AEC, 2ND and 2HL have been heard consistently during odd intervals.

It was reported incorrectly in a recent issue that 2NO has been operating on 276 Me. with SEP. 2NO has been operating on 276 Me. with SEP. as a some fair for experimentation, having encessfully managed to get a "lighthouse" on to 10K Me. on wheat Ray Priddle managed to present a Riveton we have Ray Priddle managed to present a Riveton wheat Ray Priddle managed to present a Riveton to thing on 10K Me. per second! Just wait until his receiver troubles start!

Most of the Sydney fellows kept watch on the brands during the recent eclipse, but to date had northing musual to report. The Radio Research Board have appreciated greatly our efforts on their behalf during the recent Sporadic E openings, which goes to prove that some of the fraterality do really juitify their existence as "experimentees."

Mr. Bollowy, an engineer of the A.W.A. Co., lectured to us at the November meeting of the A.W.A. Co., lectured to us at the November meeting of the A.H. section and fouging by comments heard around the bands satisfied all tastes. We appreciate Mr. Holloway's effort and we hope to hear more of him in the future. He overed the subject of "wh.T. Receiver Design and Technique" very thercopping and catered for the not-ton-technical people, who go Corbin stressed this point during his vote of thanks.

Mr. Wayte 2.4WW will be our guest speaker at the December meeting, his subject being "Noise Limiter Design." We have a houp of respect for Mr. Whyte, both as a Ham and a lecturer, having had the pleasure of bearing him before at a recent meeting, and we are all locking forward with in-terest to hearing him once again.

The Gladesville Radio Club held another successful field day on 26th November using 7 Me. for the hidden transmitter hunt, and 144 and 288 Me. for those so interested.

for those so interested. We had the pleasure of meeting IBW, of Wagas. In Syday recently and he gave us some interesting information of secting from the Southern Ebber interesting to the section of the

We know sho that 2LH of Lismov, and TADE of Carino, have been confacting other States on 50 Mc, also that several of the country stalwards elsewhere have acqually heard the DX benaking through. What a pity they have only receiving equipment! After all, 30 Mc, is no more difficult to reach that 28 Mc, and the technique is much!

The Wolfongong Radio Club are keenly interacted v.h.f.s. and will be very busy during the summer The Westgroup Early The are heavy determined as a second consistency of the control of the contr

to almost impossible to entry whose note hard has here made a manufacture provide, the filled activately of the manufacture of the control of the control of Transmitter when then permits the control of the Transmitter when then permits to the filled activate the Transmitter when then permits to provide the control of with some mines worked, judging by the first of the time that appears to provide the what. If the time the appears to provide the what and all result but next more we hope to publish the court and considers on the removed of the first court and considers on the removed of the first other Directional Consortie in where what we can extend Direction of Consorties in which we have about Direction of the control of the first other Directional Consorties in where what we can called a second of the control of the control of the state Directional Consorties in where where the other Directions of Consorties and the con-trol of the control of the control of the con-trol of the control of the control of the con-trol of the control of the control of the con-trol of the control of the control of the con-trol of the control of the control of the con-trol of the control of the control of the con-trol of the control of the control of the con-trol of the c

OUEENSLAND

Interstate sectivity from this Sarje has been on a large scale of late. On 14th November 48D worked 58T, 2007 and 50T; a GEE and 45D worked of 58T, 2007 and 50T; a GEE and 45D worked as they were using modulated oscillators. 40D worked 2FS, 2WJ, 2WW and 2DG and also heard 2BL; a number of VKJs and a couple of VKJs all Recitated 58T, and 42U worked 5FQ and

15th November: 4BT, 4ZU and 4FN worked a number of VK3s, 19th Nov.; 4BD worked 3BL, 3FG and also heard 3ZL and 3GN, 23rd Nov.; 4CU contacted 3FO, 26th Nov.; 4ES QS-0el three VK5s, 27th Nov.; 4RY worked ZLiffer, 4AW ZLIHP, ZLIMM and ZLIQF, and 4ES worked ZL3ZB.

of them as well as 7XL

During the period mentioned above it is believed that several other VK4s made interstate and ZL contacts, but no details are to hand at present. WESTERN AUSTRALIA

History was made during the early part of November, when 6HM of Kalgordie and 6WQ of Albany made contacts on 59 Mc. band with several VKSs. Benty congratulations to these Amateum upon their great achievements. Read their reports. Pirst from 6HM, quote— "These words come of several week's obse

"Time words come of sectral week's observations on \$8 Me. In region's enoughned with other Perish stations, and from various DX reports from \$11 stations, and from various DX reports from \$11 control of V.R.F. possibilities accurated on the \$8 sh October, when signals were beard at good strength up to 47 Me. I discovered later that the 50 Me. hand was open on the two following days in the Part, but unbortnately; I was not on 50 Me. hand. "The next sign was on the 5th November when I contacted 6CN and 6EL (both of Geraldton) of

the Mr. from 1720 to 1721 WA, time (The indiscretials for 12 No.—261) Distributably genetseried at 1740, and 1240 to on the Mr. A.T.
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28 Me., but no signs from Radio ranges at all.

"The 28 Me. band desting all those tests showed nothing unusual as far as DX was concerned, but it was unusual in respect to short skip. This could mean that the max.t. was not actually rising, and the break-through would be attributed to Sporads R, which I personally think was responsible for our

contacts.

"A Point of interest is the VXIs' opinion that
me signals were being received via reflection from
not altagether agree with my bearings here
the occusions of both break-throughs, bearings here
the occusions of both break-throughs, bearings here
the occusions of both break-throughs, bearings here
different on both dates. Another point of interest
is that while in contact with 5QR, when rignals
that while in contact with 5QR, when rignals
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6 ft. above the 18 Me, array.
"Would woolone comments from any v.h.f. boys, particularly, in regard to the cause of these transmissions, also to any observations they may have made on the dates mentioned. Their comments may be of great help in determining any future predictions, e.g., the co-incidence of the Radio Ranges with 50 Me. transmissions—VKGRM."

with 50 MC transmission—VEGPAT—
The following is a list of relation board and
The following is a list of relation board and
day 18th Normaber, All times are again W.A.N.T.
day 18th Normaber, All times are again W.A.N.T.
has ween a list of the property of the control of the co

geve also his W.A.S.
No reports have come in from Amateurs in Berth.
It is doubted; whether anything was haard during the common of the common tenns, from 1750 hours onwards. beans, from http://doi.org/10.1009/10.

yet, so also has to work cross-band, receiving on to metres. 6BC has been heard both in Perth (195 miles) and also by 6WG of Albany approximately the same distance. This would be via ground wave propagation.

TASMANIA

The 50 Mc. band opened quite a number of times during the past month, but up till the time of writing these notes (16/12/48) conditions have been patchy and only the kreeness of some of the invescement to the band in the Hobert area has helped to make this report worth while.

No reports are to hand of any contacts that the
Northern Gang have made, but we know they are
quite active became of stations in other States hard

unite active because of memors in outer scales have calling them.

23/21/48 to date: 48% 48Hz, 40U, 44W, 48Y, 18T, 48K, 24NT, 2VC, 28Z, 25DE, 27M, 2FS, 21Y, 2LABR, ZLADR, and ZL4GY, TDH has conducted 25NT, 28Z, 2VU, 2ADE, 2CY, 3FN, 2W, 4ZU, 48% 48T, 4FY, 4TC, 1LN, 41R, 2LLAR, ZLADR, ZLADR, and ZL4GY, TOW has also made many rostacts and also reports reception of a VKS.

In view of the fact that the band has never

In view of the fact that the band has sever-celly opened fully as yet, the number of stations contacted by TAJ and TDH is indicative of the lines and effort those lade are putting into the work and they are to be commended on their time and respective results.

144 Mo. DIGEST by BH: Hartley Load also United by any marves are for the large control of the target of the large control o the SABA contact of 85 miles as the best for the day, pext was SCI for 75 miles. SIM 47 miles, and opprox. 60 miles to the Geeleng gamp. All signals worked were R6 89, except 8ABA-YS who were R5 and 88, this portable outfit did not do so were R5 and 88, this po ALL larcengover, misses and the property of th

Ro S7 for a distance of 40 miles.

at an or lot & dutance or so miss.

Apparently the 60 Mc. break-through on the Seld day had a lot to do with the absence of several soluting stations who reported to be readly, willing, and able. SABG was heard by 3CP in Melboursebet bots some trouble severated to be in John's recorded. box some trouble accured to be in John's receiver. He made contract with 3ACW, SU, 3ABA and Particle, and the second seco A novelty was added to the operations by GASG A novelty was added to the operations by daNG going out portable to the City, and Boorke St. of all locations! Steve brought into use the wire recordings of actions that were worked and these were played over at the December v.h.f. group meeting, much to the surprise of several Hams who did not know their own voices. So ended the day, much done for little, and almost a case of not chough stations. The indications do point out that hand conditions could be much better for DX work hoped that the future will see station go out afield on week-suds irrespective of field days in the effort of finding good conditions, that is

of call signs he is hard put to identify the stations. For receiving be has a super-rages, (CV6, 6C5, 6V8) used with a 16 element horizontal beam, fed with 300 ohm line. The signals come from a 50 Mc. unit tripling in the p.s. and driving another 820 p.s., a later addition will be a 522.

SABG reports as to being on the band permanently with early with a mounted out when he operated at home on 24 volts and on 12 when portable. The 12 volts is derived from a petrol driven Delco unit. When the ideal antenna is found it will be perched 38 feet high. At present the lary H curtain re-flected array is in hand. 3ACW is another of the fected array is in hand. 3ACW is another of the mod. oor., super-regen, together with the four ele-ment close-spaced beam. Quite the right gear for start with for getting experience on w.h.fu. 3UI out last field day used his 532 equipment and dispole, but has to travel much to find the high spota Assocher DEI mer is one vere-boor Technical Diffuse to be about the contract of the contract o Another 522 user is our ever-busy Technical werry to Harold as to what is best for SYV. Visitors to the 144 Me, shaeks are very

now, 3ABA showed the way with 5GN, while 3ASG shoved the mike to 3TA of Horskam. 3OD, of the a look-are will be 3JA.

SEL is very busy with the idea of a " ZEL is very busy with the idea of a "turnstille" aniessa. By the time these holes appear 3GE will have his 522 perking on 146.78 Mc., a frequency which is quite sensible to use. The power supply at Churchill Le is from a 32 volt house lighting amply and for a start a simple dipole will be used 250 feet above sea level. 3EM prosented hitmash with a Xmas persent in the slape of a 16 element with a Xmas present in the shape of a 10 element beam and now is besent to advantage. Harry SKN is making cognitive re simple 144 Mc. gent for in making cognitive re simple 144 Mc. gent for the state of the simple state of the is a 72 ohrs co-ax dipole.

SACW for the present is using p.p. 7193 mod-JACW for the present is using p.p. 7193 mod-ce, and a 679 in Bieldien modulation, curbon miles e.c. and a 679 in Bieldien modulation, curbon miles Mc. Super-regen, of 8692, 6270, 698 is used on the 4 element ca. rotary 38 feet high. The Got-long network is still adding recruits, for in self-long network is still adding recruits, for in self-in control and control of the control of the is on with a mod-cast. In a three element beam, JAAG is building up a UV6 transcript. JAEW has just put on ble eighth beam fully rotary, 46 has just put up his cighth beam fully rotary, 40 feet high complete by control wires for control of motors and indicaters, etc. 3BU won't make the League team this year on account of the old leg playing up.

SRE is putting very strong signals on 146 Mc. from his temporary rig of a RE34 mod-oec, which is boosted by p.p. 45s, antenna is an indoor three element series phased array, receiver 955 superis booted by p.p. 46¢, internal is an indoor three clement series planed surge, receiver \$5.5 open-clement series planed surge, receiver \$5.5 open-clement series planed surge, and the series to a 46 fort high half wave dipole, series of two 645ki-6456 fined the like contamination re-clement series of the series of two 645ki-6456 fined the like contamination re-clement series of two 645ki-6456 fined to like contamination re-clement series of two 645ki-6456 fined to like contamination re-clement series of the like of two contamination re-clement series of the like of two fined series of two fined seri

Indications of the N.S.W. w.h.f. contest held on 50, 144 and 288 Me. show that 2LY, 2LZ up in the Blue Meuntains are well in front with large scores, also 2ADT of Common's whose score is core SCORES, 4180 ZADT of CHARGOS Without score is over 600 points. The regular gang on 144 Me. is made up of VEZs VW, WJ, ANB, ABB, UV, PU, ASE, AZ, ASP, ASP, BL, HL, LZ, MQ, NB, AJA, FE and PF. 2VW has just completted his mobile great AG, ANY, AISC, HL, LZ, MQ, NB, AJA, FR and PF. 2YW has just completed his mobile gests comprising a 12 west; pair of CVGs with a 6LG and 6J5 as modulators to relieve with a 9802 superand 605 he monutators together with a seury super-regrea, and two chape and/o need with a simple dipole half wave. Finds he can hear and work all the etailous just as well with simple geter as with super-heta and high power rigo. TRU of Gostore has at hast got his beam up and now is classed as

Annual holidays out short the strengt by 7AB to work the 144 Mc. rig over the Bam Struit to 3OI; when things break even VK3 will know where it is coming from.

The Mt. Gambier boys were on the job for the VE3 field day but had nothing to report except 5MS will have a bigger receiver for the next field day, the unit is a BO74S. SJA is bury according

the countryside for any windmill towers that are going begging. No contact was made to Mt. Lofts, 32D is QRU with his mechanical blowly (Amor), 7), and next trem is a mebble 144 Mo. rig for VKS, For the benefit of those interested in v.h.f. matters and who have not access to the R.S.G.B.
"Bulletin," it may be of some interest to note
that the Gs commenced operations on their 140-146 that the Gs commenced operations on their 145:146. Msc. band on its September. Disposal great is veil as the first of the for both purposal including SEM, Attiennae in the Gr. Both purposal including SEM, Attiennae in the Gr. Both purposal including SEM, Attiennae popular with the Yagi next bost. High power does not appear to be in favour as 38 watts access to be the maximum used. Quite a number of contacts have been made up to \$50 miles and two-way hopely access the English Channol to Rollsined and ways access the English Channol to Rollsined and

CORRESPONDENCE

APPRECIATION

Mary St., Waterman's Bay, Western Australia.

Editor "A.R.," Sir.

Recently 1 visited VKS for a tew days, and
whilst there, called in at 191 Queen Street, and
met your Divisional Secretary, Mrs. Orosa
We had quite a chat about Amateurs generally. We had quite a chat shoul Anasterm generally. Mrs. Cross conversed as though the heredly were an Anastern, and I felt quille at home rags chewing should be able to the converse of the conver

to locate my friend, I did ring, and to my amaze-ment she taid me where he worked, how to get in touch with him, and also that he was anxious

in touch with him, and also that he was arrived in touch with him, and also that he was arrived so that the second arrived with the second arrived so that the second arrived with the country of the second arrived with the

-D. COUGH, VK6WY.

FOR SALE, **EXCHANGE, WANTED**

9d. per line, minimum 2/-

Copy must be received by 15th of month. Remittance must accompany advertisement. Calculation of cost is based on an average of six words per line.

FOR SALE.—American Hammerlund "Super-Pro" BC779B Receiver and Power Supply Unit RA-94-A, eighteen tubes, condition as new. What offers? -VK4ES.

WANTED. - Ham Receiver, homebrew or otherwise, battery or a.c., must be sharp, stable, and suitable for use as stock receiver for 14, and as i.f. channel for double-change to v.h.f. Up to £15. Contact VK3AGF, 132 Madden Ave., Mildura, Vic.

WANTED TO BUY .- 100 Kc. Crystal from "Loran" Equipment, price and par-ticulars to A. J. Drew, 63 Stanley St., Erindale, South Australia.

TRANSFORMERS OF DISTINCTION

HIGH TENSION PLATE SUPPLY TRANSFORMERS

The units listed in this Section are high-tension transformers for full-wave rectifier circuits. Valve heart windings are not incorporated, as they are designed for use in amateurs' transmitters, large public address and paging installations, and other applications where it is necessary to break the B positive DC currol. Fine for "stand-high" operations.

D.C. supply line for "stand-by" operation	a.
ITEM 20. Primary, 200-230-240, Primary, 200-300-500, 250 mA Choke See: 500-600-500, 250 mA Choke See: 500-60-500 mA Choke See: 500-60-60 mA Choke See: 500-60-60 mA Choke See: 500-60-60 mA Choke See: 500-60 mA Choke See:	CHOKE INPUT
TEM 21. Primary XO-230-240v, 11. 880/710/710/880v, 275 mA Chicke I Buer Sub-4-5/8" H	CHOKE INPUT
TEM 22 Primery: 200-230-240v. S00vA 50 cps H.T.: 1250/1250v. 400 mA Cheke Input Base: 6/5x6x6/5/" H (app.) Mrtp: O.C. Volts	1000v R66 Rectifier
ITEM 23 Primary: 200-230-240v. 575vA H.T.: 1400/1400v. 400 mA Base: 61/xx61/xx61." H (app.) Autg. D.C. Volts	

CHOKES
The Chokes covered in this Section are tested under measured

inductance values with rated D.C. flowing, as the meaningless '70 Henry' values are misleading to the uninitiated, and ignored by the engineer. They are smoothing inductances for use as the first choke in condenser input systems, or, ef course, as the second check for choke input circuits.

All inductances are sufficiently high for effective filtering, while D.C. resistance values are made low to maintain good regulation.

regulation.
TFM 2
TEM 25
TEM 26

TYPE No. 201515
Maximum Direct Current
Veltage Drop 35 volts Maximum Inductance 25 Hys
Maximum Inductance 22 Hys Minimum Inductance 12 Hys Base: 316-62234" H Wgt. 4 Ib. 4 aza Mntg: V14 "5" is 1½"
Insulation 1000v
THE 102112

Insulation and the second	1006v
ITEM 28	TYPE 102512
Maximum Direct Current	750 4
D.C. Resistance	100 share
Voltage Drop	TE contac
Manimum Inductance @ 10v. A.C.	15 14
Maximum Inductance @ 80v A.C.	20 Hz
Full Load Inductance @ 80v. A.C.	10 Like
Base: 3%x2-7/8"x31/5" H	West 5 to 4 one
Mnig: VI4	150 in 20
Insulation	10004
TEM 29 Abs:main Direct Current D.C. Resistance voltage Drox, voltage Drox, Ac Assiminam Inductance & 10v, A.C. Assiminam Inductance & 80v, A.C. But Load Inductance & 10v, A.C. But Load Inductance & 10v, A.C. Assiminam Inductance & 10v, A.C. Assiminam Inductance & 10v, A.C. Assiminam Inductance & 10v, A.C. But Load Induc	18 Volts 10 Hys 14 Hys 5 Hys 7 Hys Wgt 7 lb, 12 czs
Irmulation ITEM 30. Assumer Direct Current O.C. Resistance Assumer Inductance Base: 2x1-3/8* H Mndg: MMD	TYPE No. 35215
Mntg: MHO	ergar to 11/160

				2. 12 1	17.16.
ITEM 31			TY	PE No.	294
Maximum Filament C	Direct Curre	ent		1 .	Amp.
	" H			Wet I	DZ5
Matg: MHO				"S" is 1	1/16"

SWINGING CHOKES

The swinging chokes in this section have the same general design and constructional features as the smoothing chokes above. Oap ratios, however, are modified on an incremental inductance bridge to develop large initial inductances, and, at the same time, to maintain sufficient inductance under toll load conditions to comply with the circuit requirements of high efficiency rectifier systems where the maximum possible regulation is reviewed in the circuit requirements of the circuit requirements are the maximum possible regulation is re-

Maximum Direct Current 250 mA D.C. Resistance 100 ohma Voltage Drop
Voltage Drop Swinging L is from 20 Hys to 5 Hys
Base: 3% x 2% x 3% H Wgt. 5lb. 4 ozs. Mntg: V14 "5" is 2"
Insulation 1000 volts.
ITEM 33 Maximum Direct Current 300 mA
ITEM 32 TYPE No. 5734
Maximum Direct Current 300 mA
Swinging L is from 15 Hys to 4 Hys Base: 4 x 3 x 4" H Wgt. 7 lb, 12ozs Mntg: Not shown "S" is 2"
Base: 4 x 3% x 4" H Wet 7 lb 1200s
Mater Not chouse

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